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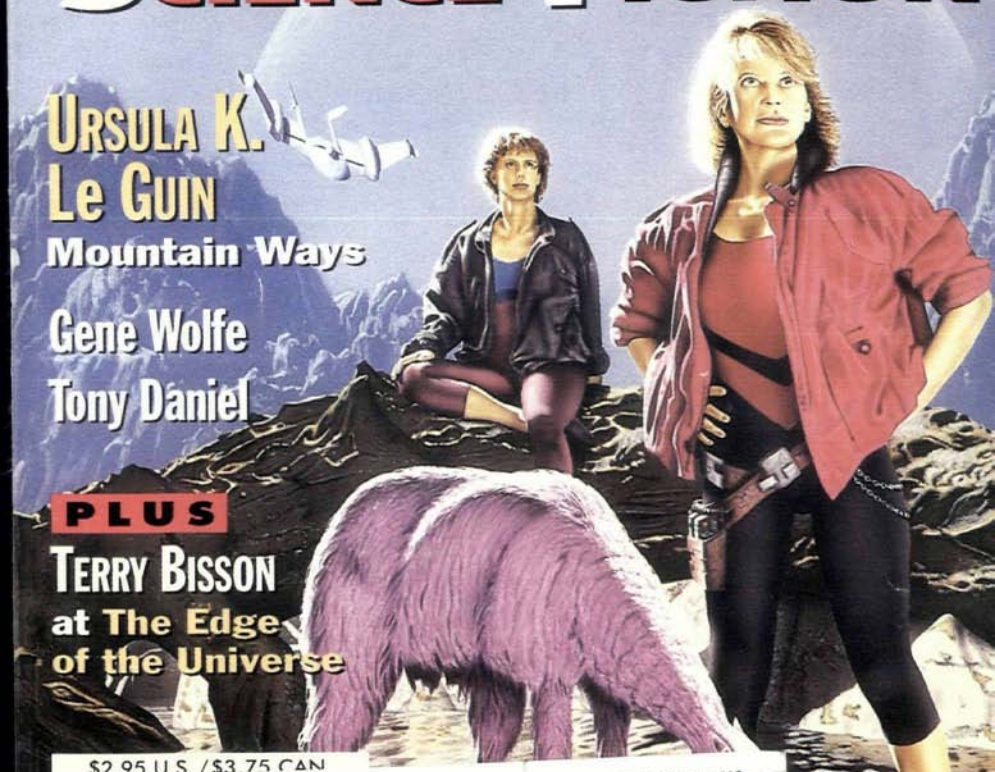

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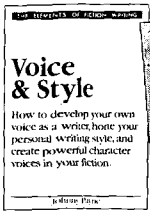
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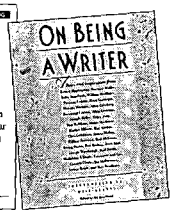

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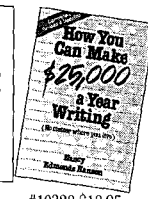

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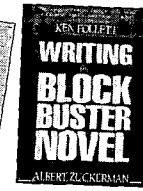

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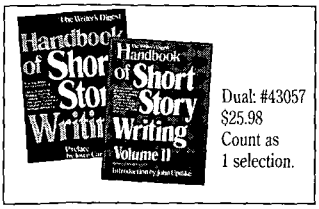

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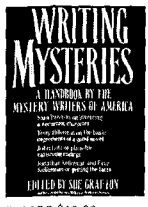

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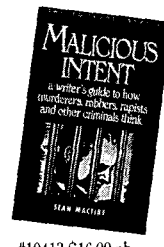

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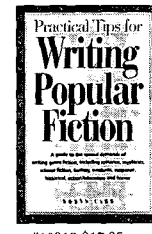

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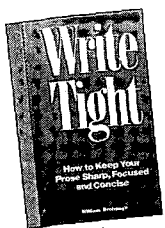

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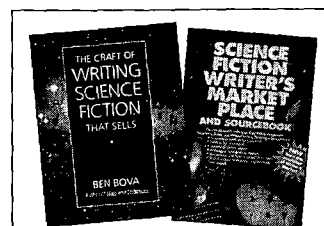

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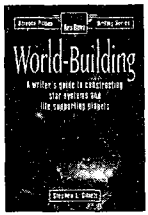

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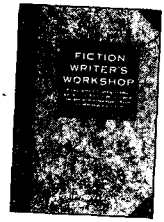

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SCIENCE FICTION

Vol. 20 No. 8 (Whole Number 248)
August 1996

Next Issue on Sale
July 23, 1996

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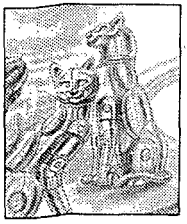

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Published monthly except for a combined October/November double issue by Dell Magazines. One year subscription $33.97 in the United States and U.S. possessions. In all other countries $43.45, (GST included in Canada) payable in advance in U.S. funds. Address for subscription and all other correspondence about them, Box 5130, Harlan, IA 51593-5130. Allow 6 to 8 weeks for change of address. Call 800-333-4108 with questions about your subscription. For back issues send $5.00 to *Asimov's Science Fiction*, P.O. Box 40, Vernon, NJ 07462. Address for all editorial matters: *Asimov's Science Fiction*, 1540 Broadway, NY, NY 10036. *Asimov's Science Fiction* is the registered trademark of Dell Magazines,

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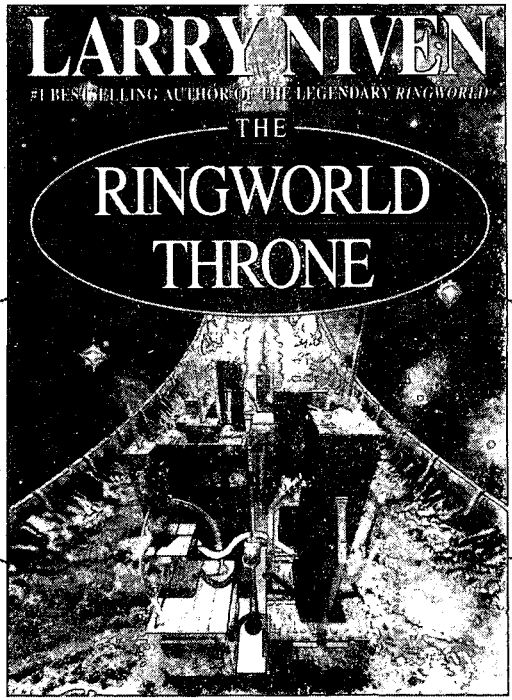

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REFLECTIONS

by Robert Silverberg

GOURMET TO GO

Words are the tools of my profession, just as scalpels and lasers are those of a surgeon, and chisels and saws are those of a carpenter. (Though I suppose carpenters are also using scalpels and lasers these days, and surgeons, probably, chisels and saws!) But one big difference between my profession and those others is that whereas a surgeon's tools, or a carpenter's, are safely stowed away in their containers when not in use, mine must be stored right out in public, where anybody at all can come along and blunt their cutting edge.

What I mean by that is that I have no exclusive rights to the words I use; and if other people choose to misuse one, in such a way that the misuse is eagerly picked up and accepted as correct usage by the population in general, I have lost the use of that word myself. I can no longer be certain, you see, that if I use it properly I will be properly understood.

Consider "fortuitous." It means *accidental.* It doesn't mean *fortunate,* or, at least, it didn't until a few years ago. "Fortuitous" and "fortunate" both have the same Latin ancestor, *fors,* which meant "luck." But two Latin derivations emerged from *fors.* One was *fortuitus,* meaning "accidental" or "casual," and the other was *fortunatus,* meaning "happy" or "lucky." But because the English word "fortuitous" somehow sounds grander and more erudite than "fortunate," people started, fifteen or twenty years ago, to use it to have the same meaning as the similar (but different) word.

Where does that leave me, the writer? Suppose I use "fortuitous" correctly, in its pure sense, and tell you that just as my hero and heroine were about to enter the hotel where they were to spend their long-postponed honeymoon, the fortuitous arrival of an old friend caused them to hesitate in the street just long enough to be squashed flat by a five-hundred-pound safe that fell on them from a neighboring forty-story. "Fortuitous?" you say in wonder. "What's so goddamned fortuitous about that?" But of course it was—purely fortuitous as I understand the word. You happen to understand it differently; and, as a result, I can't use it at all any more. Or consider this, from a recent scholarly article on Roman history I happened fortuitously to read yesterday:

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ruler ever failed as completely as did Gaius Messius Quintus Decius. This penultimate loser had been granted the title 'Traianus' by the Roman Senate. . . ."

Huh? *Penultimate* loser? Who was the ultimate one, then? "Penultimate" means *next-to-last.* The prefix *pen* in that word comes from the Latin *paene,* "almost." Something *pen*ultimate is almost last the way a *pen*insula is almost an island. But half-literate people who like their words to make a big noise have decided that "penultimate" is simply a more impressive way to say "ultimate," and I see it used that way all the time. "Ultimate" isn't ultimate enough for them; so they intensify their statement with the orotund "*pen*ultimate." Hapless educated man that I am, I don't know which meaning to expect, the one that stems from a comprehensible Latin root, or the new free-floating one. Nor, if I use the word myself, can I expect my readers to understand what I'm talking about. ("He fired his penultimate shot; and then he fired the one after that." Come again, Silverberg?)

Or consider the word "gourmet." Comes from the French; means "a lover of fine foods." (To be distinguished from *gourmand,* a French word meaning "glutton.") Naturally Americans began almost immediately to confuse "gourmet" with "gourmand," as we so often do with words we think sound alike. (Cf. "flaunt" and "flout.") But a subtler process of linguistic corruption has been at work here, too. First we turned "gourmet" into an adjective

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meaning "very fine," as when we refer to a "gourmet" restaurant when we speak of one that serves food that gourmets might like to eat, or "gourmet" food to describe the food that gourmet restaurants serve. But now, I see, the adjective has turned back into a noun in English—a noun that doesn't mean, as it originally did, a consumer of fine food, but rather the food itself. Just the other day I noticed a newspaper advertisement for a shop that sells take-out food. "GOURMET TO GO," was the headline. Took me a while to figure out what it meant. If I use "gourmet" in a story now, how long will it take you to figure out what *I* mean?

But mine are only the problems of a mere peddler of pseudo-scientific fables. Our society's contemporary habit of verbal imprecision causes much greater difficulties when it is the vocabulary of science that is getting messed around with. Science is a precise business. Methods and results must be described accurately if they are to be reproduced; and the reproducibility of results is essential to scientific advance. Which is why scientists, when they can, use the language of mathematics in discussing their work.

But for purposes of explaining their work to the public at large they are required to use the language of that public, modified by such new technical terms as are necessary. And that can lead to trouble, for using words in scientific discussions is something like using hedgehogs as croquet balls: words get up and move around as they please. Our society has the greatest velocity of concept-transmission in human history, and the faster a new concept moves from mind to mind, the more quickly it seems to become garbled and ceases to be available for its original functions, to everyone's great loss. Some cases in point:

Clone. In genetics, a clone is the collective term for all the descendants of a single individual that has been reproduced by asexual propagation—a plant, say, that has been extensively multiplied through the taking of cuttings. But when the notion of "cloning" human beings came to public attention in the 1970s, the word quickly shifted meaning: it refers now not to a *group* but to an *individual* whose genetic coding is identical to someone else's: "Isn't she gorgeous? I wonder where I could find a clone of her!" Are you saying that you want ten of her, all alike? No, not at all. But the biologist who uses the word to describe a specific population of mutated giant amoebas will be unable to get laymen to understand what he means.

Negative feedback. "Feedback" is the means by which a self-regulating system keeps itself operating correctly. A thermostatically controlled heating system constantly monitors room temperature so that it can turn the furnace on whenever the temperature falls below the desired level. What reaches the thermostat is quantitative information: the amount of departure

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from the desired condition. It can be expressed as a negative quantity: "We are minus three degrees from optimum in here." Technically, then, what the thermostat is getting is negative feedback, which is useful stuff, allowing an automatic-control system to correct an undesirable situation. *Positive* feedback would therefore be the kind of information that increases a system's deviation from the optimum, i.e., an undesirable thing. But when the whole feedback concept passed into public use this subtle distinction was lost. "Positive" is good, right? "Negative" is bad. So now we have the concepts of "positive feedback"—i.e., praise, constructive criticism—and "negative feedback," which is grumbling, hostility, general obstreperousness. And the old cybernetic concept of negative feedback as the key to automatic regulation goes down the drain. Another good tool lost.

Paranoid. A psychological term describing a clinical mental state marked by delusions and pathologically overintense suspiciousness; but in common usage today it merely means "very uneasy," always taking the preposition *about,* as in, "I am paranoid about getting my rent increased next month," or, "She is very paranoid about spilling red wine on her white carpet." This is a sad and silly trivialization of a useful clinical term. Using "paranoid" so casually robs us of a way of characterizing true paranoia (Hitler, Stalin, Lee Harvey Oswald).

Nuke. Not a technical term, but a corruption of one, *nuclear,* as in "nuclear reactor" or "nuclear weapon," from *nucleus,* the core of the atom. The popular slogan "No more nukes!" may thus be taken to mean either "Stop building nuclear power plants!" or "End the threat of atomic warfare!" This blurs a distinction that some thoughtful people would like to make: there are those who see atomic bombs as nasty dangerous things but who regard properly designed nuclear power plants as beneficial to humanity. Lumping both into the class of "nukes" creates emotionally potent confusion, probably not by accident, and makes it easy to argue that the nuclear power plant across the bay is likely to turn your little suburb into Hiroshima or worse if someone throws the wrong switch.

What is demonstrated by these examples, and others that no doubt could be added, is that the wondrous vitality of language carries certain built-in risks. The advance of knowledge requires the creation of new technical terms, and these, if they are vivid enough and powerful enough, pass swiftly into popular use. But the conceptual need they meet in popular speech is not precisely the one for which they originally were coined; and soon they are transformed or deformed in a way that invalidates their primary sense. If one person thinks negative feedback is useful and another views it with alarm, the phrase has become an instrument of confusion instead of communication. It seems an inevitable

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process of decay—a case of the power of entropy working even on the ultimate anti-entropic weapon, language itself. And so we will go on and on, looking for positive feedback among our clones and getting paranoid about nukes, while useful meanings shift and blur without our noticing what is taking place. Me, I'm off to Chez Maurice to calm my nerves over some gourmet French food, since I am, fortuitously, the penultimate gourmand. ●

Sheila Williams

THE 1996 ISAAC ASIMOV AWARD

Photo credit: Beth Gwinn

Isaac Asimov Award: Sandy Krider, Dylan Otto Krider, Rick Wilber, Sheila Williams, and Bill Kanter

The third Isaac Asimov Award for Undergraduate Excellence in Science Fiction and Fantasy Short Story Writing was given to Dylan Otto Krider on March 23. Dylan was an undergraduate at the University of Arizona studying physics and astronomy when he wrote his award-winning story, "He Believed in Probability." He is now a graduate student in creative writing at Vermont College. The International Association for the Fantastic in the Arts, which co-sponsors the award with *Asimov's Science Fiction* magazine, flew the author to Ft. Lauderdale, Florida, for an all-expense paid weekend at the annual Conference on the Fantastic. Dylan was accompanied by his wife Sandy.

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The Asimov Award winner, and the award's other finalists, were chosen by Gardner Dozois, myself, and IAFA Award Administrator Rick Wilber. Rick, the Kriders and I attended IAFA's Saturday evening's award banquet together. We were joined by Bill Kanter—the chairman of Crosstown Publications, which publishes *Asimov's Science Fiction* magazine. After dinner, I presented Dylan with his award certificate and a check for $500 from the magazine.

The first runner-up for this year's award was Sara Taylor of Hollins College in Roanoke, Virginia. Ms. Taylor received a two-year subscription to *Asimov's* for her story "Dancing Distance." Our second runner-up, Monica Eiland of the University of North Carolina at Chapel Hill, received a one-year subscription to *Asimov's* for "Metropolis 2000," while our third runner-up, William McMahon of Columbia College in Chicago, garnered his one-year subscription to *Asimov's* for "Rough Beast."

Honorable mentions went to Maurice G. Broaddus of Indiana University-Purdue University at Indianapolis for "Kali's Danse Macabre"; Chris Gattanella of the University of Georgia for "Rupture"; Kevin Landry of Saint Mary's University in Halifax, Nova Scotia, for "Who By His Own Hand"; Raakesh Persaud of the University of Toronto for "Upgrades and Breakdowns," and Michael Suskind of the University of Pennsylvania for "Marsley: Jesus Christ of the Donors."

Asimov's is proud to support these academic awards with IAFA. The International Association for the Fantastic in the Arts is a worldwide network of scholars, educators, writers, artists, filmmakers, critics, editors, publishers, and performers who share an interest in studying and celebrating the fantastic in all artforms, disciplines, and media. The award is also supported by the School of Mass Communications at the University of South Florida in Tampa, Florida.

We are now actively looking for next year's winner. The deadline for submissions to the contest is December 1, 1996. All full-time undergraduate students at any accredited university or college are eligible. Stories must be in English, and should run from 1,000 to 10,000 words. No submission can be returned and all stories must be previously unpublished and unsold. There is no limit to the number of submissions from each writer. Each submission must include the writer's name, address, phone number, and college or university on the cover sheet, but please remove your name from the manuscript. There is a $5.00 entry fee for each story. Checks should be made out to the Asimov Award.

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LETTERS

Dear Mr. Silverberg,

The power of words lies within their ability to evoke an emotional response, and your words in this November's "Reflections" sent my mind back to a time when I wouldn't say "s--t" if I stepped in it.

I have yet to decide whether it is a good thing or a bad thing that my vocabulary is less inhibited these days. The sound of the "f" word coming from one of my grandchildren (ranging in age from fourteen to less than two years) causes my head to spin, yet I use it on occasion, if not frequently.

In the past, these words had gut-wrenching emotional value. The person using them could be readily recognized as experiencing some more-than-ordinary trauma. Today the words may simply mean that some momentary frustration has occurred. ("Where the fuck is the *TV Guide*?") I wonder what words will take their place in giving voice to the major trauma of modern life?

Thank you for your most provocative and interesting words in each issue of *Asimov's*. "Reflections" is the first place I head for when I get the latest issue (and not simply because it's the first thing after the contents page, I assure you).

Ms. Janet K. Daily
from the Internet

Dear Mr. Silverberg:

Your November "Reflections" column suggested that "son of a gun" is a euphemism for "son of a bitch." Naval lore, however (and I regret that I cannot provide you a more specific reference—Graeme Arbuckle's *Customs and Traditions of the Canadian Navy* didn't help), has it that occasionally in the not-too-distant past, a woman who had become pregnant by a sailor would find herself in labor aboard ship. She would be situated between a couple of cannons, and the guns shot off in time with her contractions in an effort to speed the process. A male child born under such conditions was a "son of a gun"—likely someone who himself would grow up to be a sailor, and about whom a vagueness of paternity might hang.

Of course, the way sailors tell it, almost every gesture or aphorism in modern culture has a naval origin, so you can take this with a grain of sea salt.

Steve Hansen Smythe
Calgary, Canada

Dear Mr. Silverberg,

I find your commentaries to be most stimulating. Regarding the November 1995 "The Power of Words" I suspect that "doggone" derives from a reversal of "GOD" to

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"DOG." It is not hard to see god damn becoming doggone. Kind of a Spoonerism of a curse.
Thank you for your fine writing.

Mitchell Edelstein
Bethesda, MD

Dear Sirs,

I note an incongruity within Robert Silverberg's enjoyable "Reflections" column in the November 1995 double issue. His title, "The Power of Words," as well as roughly the first half of the editorial, hold that words matter; they have meaning; they are not frivolous. That as a given, how can verbal taboos be "idiotic"? In the last paragraph Mr. Silverberg maintains that "I know how idiotic the verbal taboos are, and yet am starting to regret the coarsening of taste that has come with our liberation. . . ."

Verbal taboos, as well as most other taboos, reflect a societal mindset. They are never purely representative; they do, however, arguably represent a "mental majority." Opinions regarding social mores, from which taboos arise, should in my view differ in a healthy individual or society, but I maintain that it is from such differences in opinion that strong fiction arises! Idiotic to me implies without thought/meaning/worth. Those who chose to use strong (or weak, depending upon one's point of view) language in their tales are deciding to 1) draw attention to the words, or 2) give the story context within a spoken setting. I believe we should be greatful for diversity, in this and most everything else! I may choose to use "vile obscenity" in my speech or writing, others may not. Let's celebrate both! Silverberg may use it, Card may not—I read and enjoy both.

Where do I stand on verbal obscenity, you may ask? In keeping with much that Mr. Silverberg propounds, personally I prefer *&!%!!. Consistent with all that is good and right with good writing, based upon mental texture woven by the author, it allows the reader to supply his own adjective/adverb/pronoun/subjunctive clause.

Ted Lambert
Mountain View, CA

Mr. Silverberg,

I thought your column on the power of words and the peculiarity of changing language taboos was just a hoot. Today, when the real power lies in the hands of those who control information, it is necessary to closely examine the quality of information we receive and transmit as individuals. I was glad to see that your column made its point humorously and well.

Philip Nolen
Info Junkie

Dear Editor,

So far in your November issue, I've read the Le Guin and Marusek pieces.

!!!WOW!!!

Yours faithfully,

Alecsandr Cael,
Kingston, NJ

Dear Editors,

David Marusek's "We Were Out of Our Minds with Joy" satisfied

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me in a way that many stories, even in *Asimov's,* do not. Congratulations to him for this gem and the amazing lifestyle he has constructed for himself.

As a twenty-two-year-old college senior, and recent enlistee into the circle of regular readers of *Asimov's,* I believe I understand some of the elements underlying the age gap in readers of SF magazines such as *Asimov's.* I have been reading science fiction as long as I can remember, but generally avoided what I considered to be "cheap pulp magazines." I saw only the physical quality of the magazines and imagined cheap, low-quality science fiction. Surely no respected authors would publish in such a magazine! I occupied myself with all the great novels readily available by the great names.

Needless to say, I eventually saw my huge error, and have consequently amassed a large collection of older issues of *Asimov's* from used bookstores. My discovery of *Asimov's* emerged slowly as I began to understand SF as an active and alive field in itself. As my personal thoughts turned toward ideas of careers, I began to appreciate the careers of the authors in your pages. *Asimov's* is a place in which I am presented with both the very best current thoughts and practitioners of SF.

Every author published in your pages deserves congratulations and a thank you. David Marusek wins, in addition, a smile.

Jason Pastorius
Providence, RI

Dear Editor,

I read with interest the recent editorial by Robert Silverberg: "Gods Almighty." Most of the gods he cited seemed ancient and obscure. I submit that the number of gods per capita is gradually decreasing, and that eventually a time will come when there is only one god, and then the world will end.

"Which God?" you might ask. "The one and true god," I would reply. But if you want me to tell you which of the current gods (religions, really) will be the winner, as if it were a race of some kind, then I cannot. But the fact that I cannot tell you does not mean that it will not happen. I cannot tell you the winner ot next year's Kentucky Derby, but there will be one.

It might be argued that the trend of fewer gods per capita will result in no gods at all, i.e., we will all be happy rationalists with no interest whatsoever in religion, but I think not. One must go through one to reach zero.

Daniel P. Shine
Cincinnati, OH

Dear Gardner,

I *am* an SF writer's wife, and I feel moved to respond to Bruce Boston: nonsense, nonsense, nonsense.

There. I feel much better now.

Marianne C. Porter
Philadelphia, PA

Dear Editors,

I have just finished reading "Bibi" in the mid-December *Asimov's.* I must write to you and tell you that I enjoyed the story very much!

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I began to read the story today, even though the title and the illustration told me that it wasn't really my kind of tale. I picked up a copy of *Asimov's* because I felt like reading some SF. I was very impressed with the writing of all the stories.

Still, "Bibi" didn't look like my idea of science fiction. (I wasn't wrong there . . . it wasn't!) But I knew that Mike Resnick was an excellent writer and I knew that the editors of *Asimov's* wouldn't knowingly allow a second rate story in the magazine. So, I began reading based on trust: trust in the author and editors.

As I read the beginning of the story, I kept thinking to myself: "This is very well written, but science fiction? No way!" But (thankfully) I kept on reading. What a marvelous story! Bibi comes back to take care of us, her children. It was truly touching!

I would have liked to know how it is that Bibi came back . . . but I suppose that would be superfluous to the intent of the story. Thank you, editors of *Asimov's,* for including such an original story. I shall make it a point to pick up a subscription to your magazine!

Mark H. Pierce
from the Internet

Dear Gardner,

I have just completed reading the January 1996 issue of *Asimov's*. I really enjoyed the story "Pyros" by George Ewing. Being a graduate of Michigan Tech (B.S. Chemical Engineering 1978) I could relate well to the locations mentioned in the story. I am also employed within the DOE complex and found the references to DOE interesting.

I was wondering, is George Ewing a graduate of Michigan Tech and is he employed within the DOE complex as well? His knowledge of both seem to imply that he is.

Continue the good work in selecting the stories that you do.

Ed Strieper
Graniteville, SC

Dear Editors,

I just finished reading Mary Rosenblum's story, "Gas Fish," in the February 1996 issue. I really enjoyed it. I always like Ms. Rosenblum's writing, especially her stories of mixes between humans, animals, and machines. The idea of exploring Jupiter with intelligent whale-like probes was intriguing. Ms. Rosenblum portrayed the main character's feelings of loss vividly as well. It was an excellent story.

I also enjoyed Daniel Marcus's "Prairie Godmother" and Geoffrey A. Landis's "The Last Sunset." The only story I didn't enjoy at all was Howard Waldrop's "Flatfeet!," but then I have little knowledge of pre-1940's movies, and not as much knowledge as I should have of history from that time. I'm sure someone who was better-informed (or alive during that time) would have gotten a lot more out of it.

Finally, Robert Silverberg's editorials are great! Always interesting; informative and thought-provoking. Thanks again!

Claire Horn
from the Internet

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Ursula K. Le Guin

MOUNTAIN WAYS

The alien ways and heartaches of an intricate culture on the distant planet O are vividly realized in Ursula K. Le Guin's beautiful new story. The author's latest books include *Unlocking the Air* (HarperCollins, 1996), *Four Ways to Forgiveness* (HarperPrism, 1995), and *A Fisherman of the Inland Sea* (HarperPrism, 1994).

Illustration by John Stevens

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Note for readers unfamiliar with the planet O:

Ki'O society is divided into two halves or moieties, called (for ancient religious reasons) the Morning and the Evening. You belong to your mother's moiety, and you can't have sex with anybody of your moiety.

Marriage on O is a foursome, the sedoretu—a man and a woman from the Morning moiety and a man and a woman from the Evening moiety. You're expected to have sex with both your spouses of the other moiety, and not to have sex with your spouse of your own moiety. So each sedoretu has two expected heterosexual relationships, two expected homosexual relationships, and two forbidden heterosexual relationships.

The expected relationships within each sedoretu are:

The Morning woman and the Evening man (the "Morning marriage")

The Evening woman and the Morning man (the "Evening marriage")

The Morning woman and the Evening woman (the "Day marriage")

The Morning man and the Evening man (the "Night marriage")

The forbidden relationships are between the Morning woman and the Morning man, and between the Evening woman and the Evening man, and they aren't called anything, except sacrilege.

It's just as complicated as it sounds, but aren't most marriages?

In the stony uplands of the Deka Mountains the farmholds are few and far between. Farmers scrape a living out of that cold earth, planting on sheltered slopes facing south, combing the yama for fleece, carding and spinning and weaving the prime wool, selling pelts to the carpet-factories. The mountain yama, called ariu, are a small wiry breed; they run wild, without shelter, and are not fenced in, since they never cross the invisible, immemorial boundaries of the herd territory. Each farmhold is in fact a herd territory. The animals are the true farmholders. Tolerant and aloof, they allow the farmers to comb out their thick fleeces, to assist them in difficult births, and to skin them when they die. The farmers are dependent on the ariu; the ariu are not dependent on the farmers. The question of ownership is moot. At Danro Farmhold they don't say, "We have nine hundred ariu," they say, "The herd has nine hundred."

Danro is the farthest farm of Oro Village in the High Watershed of the Mane River on Oniasu on O. The people up there in the mountains are civilized but not very civilized. Like most ki'O they pride themselves on doing things the way they've always been done, but in fact they are a willful, stubborn lot who change the rules to suit themselves and then say the people "down there" don't know the rules, don't honor the old ways, the true ki'O ways, the mountain ways.

Some years ago, the First Sedoretu of Danro was broken by a landslide up on the Farren that killed the Morning woman and her husband. The widowed Evening couple, who had both married in from other farmholds,

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fell into a habit of mourning and grew old early, letting the daughter of the Morning manage the farm and all its business.

Her name was Shahes. At thirty, she was a straight-backed, strong, short woman with rough red cheeks, a mountaineer's long stride, and a mountaineer's deep lungs. She could walk down the road to the village center in deep snow with a sixty-pound pack of pelts on her back, sell the pelts, pay her taxes and visit a bit at the village hearth, and stride back up the steep zigzags to be home before nightfall, forty kilometers round trip and six hundred meters of altitude each way. If she or anyone else at Danro wanted to see a new face they had to go down the mountain to other farms or to the village center. There was nothing to bring anybody up the hard road to Danro. Shahes seldom hired help, and the family wasn't sociable. Their hospitality, like their road, had grown stony through lack of use.

But a traveling scholar from the lowlands who came up the Mane all the way to Oro was not daunted by another near-vertical stretch of ruts and rubble. Having visited the other farms, the scholar climbed on around the Farren from Ked'din and up to Danro, and there made the honorable and traditional offer: to share worship at the house shrine, to lead conversation about the Discussions, to instruct the children of the farmhold in spiritual matters, for as long as the farmers wished to lodge and keep her.

This scholar was an Evening woman, over forty, tall and long-limbed, with cropped dark-brown hair as fine and curly as a yama's. She was quite fearless, expected nothing in the way of luxury or even comfort, and had no small talk at all. She was not one of the subtle and eloquent expounders of the great Centers. She was a farm woman who had gone to school. She read and talked about the Discussions in a plain way that suited her hearers, sang the offerings and the praise songs to the oldest tunes, and gave brief, undemanding lessons to Danro's one child, a ten-year-old Morning half-nephew. Otherwise she was as silent as her hosts, and as hardworking. They were up at dawn; she was up before dawn to sit in meditation. She studied her few books and wrote for an hour or two after that. The rest of the day she worked alongside the farm people at whatever job they gave her.

It was fleecing season, midsummer, and the people were all out every day, all over the vast mountain territory of the herd, following the scattered groups, combing the animals when they lay down to chew the cud.

The old ariu knew and liked the combing. They lay with their legs folded under them or stood still for it, leaning into the comb-strokes a little, sometimes making a small, shivering whisper-cough of enjoyment. The yearlings, whose fleece was the finest and brought the best price raw or woven, were ticklish and frisky; they sidled, bit, and bolted. Fleecing yearlings called for a profound and resolute patience. To this the young

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ariu would at last respond, growing quiet and even drowsing as the long, fine teeth of the comb bit in and stroked through, over and over again, in the rhythm of the comber's soft monotonous tune, "Hunna, hunna, na, na. . . ."

The traveling scholar, whose religious name was Enno, showed such a knack for handling new-born ariu that Shahes took her out to try her hand at fleecing yearlings. Enno proved to be as good with them as with the infants, and soon she and Shahes, the best fine-fleecer of Oro, were working daily side by side. After her meditation and reading, Enno would come out and find Shahes on the great slopes where the yearlings still ran with their dams and the newborns. Together the two women could fill a forty-pound sack a day with the airy, silky, milk-colored clouds of combings. Often they would pick out a pair of twins, of which there had been an unusual number this mild year. If Shahes led out one twin the other would follow it, as yama twins will do all their lives; and so the women could work side by side in a silent, absorbed companionship. They talked only to the animals. "Move your fool leg," Shahes would say to the yearling she was combing, as it gazed at her with its great, dark, dreaming eyes. Enno would murmur "Hunna, hunna, hunna, na," or hum a fragment of an Offering, to soothe her beast when it shook its disdainful, elegant head and showed its teeth at her for tickling its belly. Then for half an hour nothing but the crisp whisper of the combs, the flutter of the unceasing wind over stones, the soft bleat of a calf, the faint rhythmical sound of the nearby beasts biting the thin, dry grass. Always one old female stood watch, the alert head poised on the long neck, the large eyes watching up and down the vast, tilted planes of the mountain from the river miles below to the hanging glaciers miles above. Far peaks of stone and snow stood distinct against the dark-blue, sun-filled sky, blurred off into cloud and blowing mists, then shone out again across the gulfs of air.

Enno took up the big clot of milky fleece she had combed, and Shahes held open the long, loose-woven, double-ended sack.

Enno stuffed the fleece down into the sack. Shahes took her hands.

Leaning across the half-filled sack they held each other's hands, and Shahes said, "I want—" and Enno said, "Yes, yes!"

Neither of them had had much love, neither had had much pleasure in sex. Enno, when she was a rough farm girl named Akal, had the misfortune to attract and be attracted by a man whose pleasure was in cruelty. When she finally understood that she did not have to endure what he did to her, she ran away, not knowing how else to escape him. She took refuge at the School in Asta, and there found the work and learning much to her liking, as she did the spiritual discipline, and later the wandering life. She had been an itinerant scholar with no family, no close at-

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tachments, for twenty years. Now Shahes' passion opened to her a spirituality of the body, a revelation that transformed the world and made her feel she had never lived in it before.

As for Shahes, she'd given very little thought to love and not much more to sex, except as it entered into the question of marriage. Marriage was an urgent matter of business. She was thirty years old. Danro had no whole sedoretu, no child-bearing women, and only one child. Her duty was plain. She had gone courting in a grim, reluctant fashion to a couple of neighboring farms where there were Evening men. She was too late for the man at Beha Farm, who ran off with a lowlander. The widower at Upper Ked'd was receptive, but he also was nearly sixty and smelled like piss. She tried to force herself to accept the advances of Uncle Mika's half-cousin from Okro Farm down the river, but his desire to own a share of Danro was clearly the sole substance of his desire for Shahes, and he was even lazier and more shiftless than Uncle Mika.

Ever since they were girls, Shahes had met now and then with Temly, the Evening daughter of the nearest farmhold, Ked'din, round on the other side of the Farren. Temly and Shahes had a sexual friendship that was a true and reliable pleasure to them both. They both wished it could be permanent. Every now and then they talked, lying in Shahes' bed at Danro or Temly's bed at Ked'din, of getting married, making a sedoretu. There was no use going to the village matchmakers; they knew everybody the matchmakers knew. One by one they would name the men of Oro and the very few men they knew from outside the Oro Valley, and one by one they would dismiss them as either impossible or inaccessible. The only name that always stayed on the list was Otorra, a Morning man who worked at the carding sheds down in the village center. Shahes liked his reputation as a steady worker; Temly liked his looks and conversation. He evidently liked Temly's looks and conversation too, and would certainly have come courting her if there were any chance of a marriage at Ked'din, but it was a poor farmhold, and there was the same problem there as at Danro: there wasn't an eligible Evening man. To make a sedoretu, Shahes and Temly and Otorra would have to marry the shiftless, shameless fellow at Okba or the sour old widower at Ked'd. To Shahes the idea of sharing her farm and her bed with either of them was intolerable.

"If I could only meet a man who was a match for me!" she said with bitter energy.

"I wonder if you'd like him if you did," said Temly.

"I don't know that I would."

"Maybe next autumn at Manebo . . ."

Shahes sighed. Every autumn she trekked down sixty kilometers to Manebo Fair with a train of pack-yama laden with pelts and wool, and looked for a man; but those she looked at twice never looked at her once.

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Even though Danro offered a steady living, nobody wanted to live way up there, on the roof, as they called it. And Shahes had no prettiness or nice ways to interest a man. Hard work, hard weather, and the habit of command had made her tough; solitude had made her shy. She was like a wild animal among the jovial, easy-talking dealers and buyers. Last autumn once more she had gone to the fair and once more strode back up into her mountains, sore and dour, and said to Temly, "I wouldn't touch a one of 'em."

Enno woke in the ringing silence of the mountain night. She saw the small square of the window ablaze with stars and felt Shahes' warm body beside her shake with sobs.

"What is it? what is it, my dear love?"

"You'll go away. You're going to go away!"

"But not now—not soon—"

"You can't stay here. You have a calling. A resp—" the word broken by a gasp and sob— "responsibility to your school, to your work, and I can't keep you. I can't give you the farm. I haven't anything to give you, anything at all!"

Enno—or Akal, as she had asked Shahes to call her when they were alone, going back to the girl-name she had given up—Akal knew only too well what Shahes meant. It was the farmholder's duty to provide continuity. As Shahes owed life to her ancestors she owed life to her descendants. Akal did not question this; she had grown up on a farmhold. Since then, at school, she had learned about the joys and duties of the soul, and with Shahes she had learned the joys and duties of love. Neither of them in any way invalidated the duty of a farmholder. Shahes need not bear children herself, but she must see to it that Danro had children. If Temly and Otorra made the Evening marriage, Temly would bear the children of Danro. But a sedoretu must have a Morning marriage; Shahes must find an Evening man. Shahes was not free to keep Akal at Danro, nor was Akal justified in staying there, for she was in the way, an irrelevance, ultimately an obstacle, a spoiler. As long as she stayed on as a lover, she was neglecting her religious obligations while compromising Shahes' obligation to her farmhold. Shahes had said the truth: she had to go.

Akal got out of bed and went over to the window. Cold as it was she stood there naked in the starlight, gazing at the stars that flared and dazzled from the far grey slopes up to the zenith. She had to go and she could not go. Life was here, life was Shahes' body, her breasts, her mouth, her breath. She had found life and she could not go down to death. She could not go and she had to go.

Shahes said across the dark room, "Marry me."

Akal came back to the bed, her bare feet silent on the bare floor. She slipped under the bedfleece, shivering, feeling Shahes' warmth against

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her, and turned to her to hold her; but Shahes took her hand in a strong grip and said again, "Marry me."

"Oh if I could!"

"You can."

After a moment Akal sighed and stretched out, her hands behind her head on the pillow. "There's no Evening men here; you've said so yourself. So how can we marry? What can I do? Go fishing for a husband down in the lowlands, I suppose. With the farmhold as bait. What kind of man would that turn up? Nobody I'd let share you with me for a moment. I won't do it."

Shahes was following her own train of thought. "I can't leave Temly in the lurch," she said.

"And that's the other obstacle," Akal said. "It's not fair to Temly. If we do find an Evening man, then she'll get left out."

"No, she won't."

"Two Day marriages and no Morning marriage? Two Evening women in one sedoretu? There's a fine notion!"

"Listen," Shahes said, still not listening. She sat up with the bedfleece round her shoulders and spoke low and quick. "You go away. Back down there. The winter goes by. Late in the spring, people come up the Mane looking for summer work. A man comes to Oro and says, is anybody asking for a good finefleecer? At the sheds they tell him, yes, Shahes from Danro was down here looking for a hand. So he comes on up here, he knocks at the door here. My name is Akal, he says, I hear you need a fleecer. Yes, I say, yes, we do. Come in. Oh come in, come in and stay forever!"

Her hand was like iron on Akal's wrist, and her voice shook with exultation. Akal listened as to a fairytale.

"Who's to know, Akal? Who'd ever know you? You're taller than most men up here—you can grow your hair, and dress like a man—you said you liked men's clothes once. Nobody will know. Who ever comes here anyway?"

"Oh, come on, Shahes! The people here, Magel and Madu—Shest—"

"The old people won't see anything. Mika's a half-wit. The child won't know. Temly can bring old Barres from Ked'din to marry us. He never knew a tit from a toe anyhow. But he can say the marriage ceremony."

"And Temly?" Akal said, laughing but disturbed; the idea was so wild and Shahes was so serious about it.

"Don't worry about Temly. She'd do anything to get out of Ked'din. She wants to come here, she and I have wanted to marry for years. Now we can. All we need is a Morning man for her. She likes Otorra well enough. And he'd like a share of Danro."

"No doubt, but he gets a share of me with it, you know! A woman in a Night marriage?"

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"He doesn't have to know."

"You're crazy, of course he'll know!"

"Only after we're married."

Akal stared through the dark at Shahes, speechless. Finally she said, "What you're proposing is that I go away now and come back after half a year dressed as a man. And marry you and Temly and a man I never met. And live here the rest of my life pretending to be a man. And nobody is going to guess who I am or see through it or object to it. Least of all my husband."

"He doesn't matter."

"Yes he does," said Akal. "It's wicked and unfair. It would desecrate the marriage sacrament. And anyway it wouldn't work. I couldn't fool everybody! Certainly not for the rest of my life!"

"What other way have we to marry?"

"Find an Evening husband—somewhere—"

"But I want you! I want you for my husband and my wife. I don't want any man, ever. I want you, only you till the end of life, and nobody between us, and nobody to part us. Akal, think, think about it, maybe it's against religion, but who does it hurt? Why is it unfair? Temly likes men, and she'll have Otorra. He'll have her, and Danro. And Danro will have their children. And I will have you, I'll have you forever and ever, my soul, my life and soul."

"Oh don't, oh don't," Akal said with a great sob.

Shahes held her.

"I never was much good at being a woman," Akal said. "Till I met you. You can't make me into a man now! I'd be even worse at that, no good at all!"

"You won't be a man, you'll be my Akal, my love, and nothing and nobody will ever come between us."

They rocked back and forth together, laughing and crying, with the fleece around them and the stars blazing at them. "We'll do it, we'll do it!" Shahes said, and Akal said, "We're crazy, we're crazy!"

Gossips in Oro had begun to ask if that scholar woman was going to spend the winter up in the high farmholds, where was she now, Danro was it or Ked'din?—when she came walking down the zigzag road. She spent the night and sang the offerings for the mayor's family, and caught the daily freighter to the suntrain station down at Dermane. The first of the autumn blizzards followed her down from the peaks.

Shahes and Akal sent no message to each other all through the winter. In the early spring Akal telephoned the farm. "When are you coming?" Shahes asked, and the distant voice replied, "In time for the fleecing."

For Shahes the winter passed in a long dream of Akal. Her voice sounded in the empty next room. Her tall body moved beside Shahes

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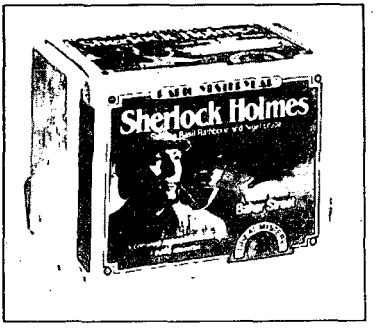

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through the wind and snow. Shahes' sleep was peaceful, rocked in a certainty of love known and love to come.

For Akal, or Enno as she became again in the lowlands, the winter passed in a long misery of guilt and indecision. Marriage was a sacrament, and surely what they planned was a mockery of that sacrament. Yet as surely it was a marriage of love. And as Shahes had said, it harmed no one—unless to deceive them was to harm them. It could not be right to fool the man, Otorra, into a marriage where his Night partner would turn out to be a woman. But surely no man knowing the scheme beforehand would agree to it; deception was the only means at hand. They must cheat him.

The religion of the ki'O lacks priests and pundits who tell the common folk what to do. The common folk have to make their own moral and spiritual choices, which is why they spend a good deal of time discussing the Discussions. As a scholar of the Discussions, Enno knew more questions than most people, but fewer answers.

She sat all the dark winter mornings wrestling with her soul. When she called Shahes, it was to tell her that she could not come. When she heard Shahes' voice her misery and guilt ceased to exist, were gone, as a dream is gone on waking. She said, "I'll be there in time for the fleecing."

In the spring, while she worked with a crew rebuilding and repainting a wing of her old school at Asta, she let her hair grow. When it was long enough, she clubbed it back, as men often did. In the summer, having saved a little money working for the school, she bought men's clothes. She put them on and looked at herself in the mirror in the shop. She saw Akal. Akal was a tall, thin man with a thin face, a bony nose, and a slow, brilliant smile. She liked him.

Akal got off the High Deka freighter at its last stop, Oro, went to the village center, and asked if anybody was looking for a fleecer.

"Danro." — "The farmer was down from Danro, twice already." — "Wants a finefleecer." — "Coarsefleecer, wasn't it?" — It took a while, but the elders and gossips agreed at last: a finefleecer was wanted at Danro.

"Where's Danro?" asked the tall man.

"Up," said an elder succinctly. "You ever handled ariu yearlings?"

"Yes," said the tall man. "Up west or up east?"

They told him the road to Danro, and he went off up the zigzags, whistling a familiar praise-song.

As Akal went on he stopped whistling, and stopped being a man, and wondered how she could pretend not to know anybody in the household, and how she could imagine they wouldn't know her. How could she deceive Shest, the child whom she had taught the water rite and the praise-songs? A pang of fear and dismay and shame shook her when she saw Shest come running to the gate to let the stranger in.

Akal spoke little, keeping her voice down in her chest, not meeting the

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child's eyes. She was sure he recognized her. But his stare was simply that of a child who saw strangers so seldom that for all he knew they all looked alike. He ran in to fetch the old people, Magel and Madu. They came out to offer Akal the customary hospitality, a religious duty, and Akal accepted, feeling mean and low at deceiving these people, who had always been kind to her in their rusty, stingy way, and at the same time feeling a wild impulse of laughter, of triumph. They did not see Enno in her, they did not know her. That meant that she was Akal, and Akal was free.

She was sitting in the kitchen drinking a thin and sour soup of summer greens when Shahes came in—grim, stocky, weather-beaten, wet. A summer thunderstorm had broken over the Farren soon after Akal reached the farm. "Who's that?" said Shahes, doffing her wet coat.

"Come up from the village." Old Magel lowered his voice to address Shahes confidentially: "He said they said you said you wanted a hand with the yearlings."

"Where've you worked?" Shahes demanded, her back turned, as she ladled herself a bowl of soup.

Akal had no life history, at least not a recent one. She groped a long time. No one took any notice, prompt answers and quick talk being unusual and suspect practices in the mountains. At last she said the name of the farm she had run away from twenty years ago. "Bredde Hold, of Abba Village, on the Oriso."

"And you've finefleeced? Handled yearlings? Ariu yearlings?"

Akal nodded, dumb. Was it possible that Shahes did not recognize her? Her voice was flat and unfriendly, and the one glance she had given Akal was dismissive. She had sat down with her soupbowl and was eating hungrily.

"You can come out with me this afternoon and I'll see how you work," Shahes said. "What's your name, then?"

"Akal."

Shahes grunted and went on eating. She glanced up across the table at Akal again, one flick of the eyes, like a stab of light.

Out on the high hills, in the mud of rain and snowmelt, in the stinging wind and the flashing sunlight, they held each other so tight neither could breathe, they laughed and wept and talked and kissed and coupled in a rock shelter, and came back so dirty and with such a sorry little sack of combings that old Magel told Madu that he couldn't understand why Shahes was going to hire the tall fellow from down there at all, if that's all the work was in him, and Madu said what's more he eats for six.

But after a month or so, when Shahes and Akal weren't hiding the fact that they slept together, and Shahes began to talk about making a sedoretu, the old couple grudgingly approved. They had no other kind of approval to give. Maybe Akal was ignorant, didn't know a hassel-bit from a

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cold-chisel; but they were all like that down there. Remember that traveling scholar, Enno, stayed here last year, she was just the same, too tall for her own good and ignorant, but willing to learn, same as Akal. Akal was a prime hand with the beasts, or had the makings of it anyhow. Shahes could look farther and do worse. And it meant she and Temly could be the Day marriage of a sedoretu, as they would have been long since if there'd been any kind of men around worth taking into the farmhold, what's wrong with this generation, plenty of good men around in my day.

Shahes had spoken to the village matchmakers down in Oro. They spoke to Otorra, now a foreman at the carding sheds; he accepted a formal invitation to Danro. Such invitations included meals and an overnight stay, necessarily, in such a remote place, but the invitation was to share worship with the farm family at the house shrine, and its significance was known to all.

So they all gathered at the house shrine, which at Danro was a low, cold, inner room walled with stone, with a floor of earth and stones that was the unleveled ground of the mountainside. A tiny spring, rising at the higher end of the room, trickled in a channel of cut granite. It was the reason why the house stood where it did, and had stood there for six hundred years. They offered water and accepted water, one to another, one from another, the old Evening couple, Uncle Mika, his son Shest, Asbi who had worked as a pack-trainer and handyman at Danro for thirty years, Akal the new hand, Shahes the farmholder, and the guests: Otorra from Oro and Temly from Ked'din.

Temly smiled across the spring at Otorra, but he did not meet her eyes, or anyone else's.

Temly was a short, stocky woman, the same type as Shahes, but fairer-skinned and a bit lighter all round, not as solid, not as hard. She had a surprising, clear singing voice that soared up in the praise-songs. Otorra was also rather short and broad-shouldered, with good features, a competent-looking man, but just now extremely ill at ease; he looked as if he had robbed the shrine or murdered the mayor, Akal thought, studying him with interest, as well she might. He looked furtive; he looked guilty.

Akal observed him with curiosity and dispassion. She would share water with Otorra, but not guilt. As soon as she had seen Shahes, touched Shahes, all her scruples and moral anxieties had dropped away, as if they could not breathe up here in the mountains. Akal had been born for Shahes and Shahes for Akal; that was all there was to it. Whatever made it possible for them to be together was right.

Once or twice she did ask herself, what if I'd been born into the Morning instead of the Evening moiety?—a perverse and terrible thought. But perversity and sacrilege were not asked of her. All she had to do was change sex. And that only in appearance, in public. With Shahes she was a woman, and more truly a woman and herself than she had ever been in

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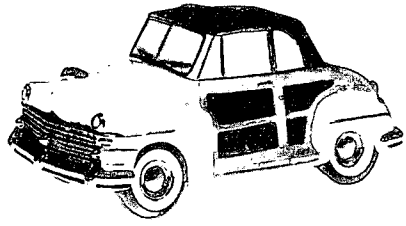

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her life. With everybody else she was Akal, whom they took to be a man. That was no trouble at all. She was Akal; she liked being Akal. It was not like acting a part. She never had been herself with other people, had always felt a falsity in her relationships with them; she had never known who she was at all, except sometimes for a moment in meditation, when her *I am* became *It is,* and she breathed the stars. But with Shahes she was herself utterly, in time and in the body, Akal, a soul consumed in love and blessed by intimacy.

So it was that she had agreed with Shahes that they should say nothing to Otorra, nothing even to Temly. "Let's see what Temly makes of you," Shahes said, and Akal agreed.

Last year Temly had entertained the scholar Enno overnight at her farmhold for instruction and worship, and had met her two or three times at Danro. When she came to share worship today she met Akal for the first time. Did she see Enno? She gave no sign of it. She greeted Akal with a kind of brusque goodwill, and they talked about breeding ariu. She quite evidently studied the newcomer, judging, sizing up; but that was natural enough in a woman meeting a stranger she might be going to marry. "You don't know much about mountain farming, do you?" she said kindly after they had talked a while. "Different from down there. What did you raise? Those big flatland yama?" And Akal told her about the farm where she grew up, and the three crops a year they got, which made Temly nod in amazement.

As for Otorra, Shahes and Akal colluded to deceive him without ever saying a word more about it to each other. Akal's mind shied away from the subject. They would get to know each other during the engagement period, she thought vaguely. She would have to tell him, eventually, that she did not want to have sex with him, of course, and the only way to do that without insulting and humiliating him was to say that she, that Akal, was averse to having sex with other men, and hoped he would forgive her. But Shahes had made it clear that she mustn't tell him that till they were married. If he knew it beforehand he would refuse to enter the sedoretu. And even worse, he might talk about it, expose Akal as a woman, in revenge. Then they would never be able to marry. When Shahes had spoken about this Akal had felt distressed and trapped, anxious, guilty again; but Shahes was serenely confident and untroubled, and somehow Akal's guilty feelings would not stick. They dropped off. She simply hadn't thought much about it. She watched Otorra now with sympathy and curiosity, wondering what made him look so hangdog. He was scared of something, she thought.

After the water was poured and the blessing said, Shahes read from the Fourth Discussion; she closed the old boxbook very carefully, put it on its shelf and its cloth over it, and then, speaking to Magel and Madu as was proper, they being what was left of the First Sedoretu of Danro, she

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said, "My Othermother and my Otherfather, I propose that a new sedoretu be made in this house."

Madu nudged Magel. He fidgeted and grimaced and muttered inaudibly. Finally Madu said in her weak, resigned voice, "Daughter of the Morning, tell us the marriages."

"If all be well and willing, the marriage of the Morning will be Shahes and Akal, and the marriage of the Evening will be Temly and Otorra, and the marriage of the Day will be Shahes and Temly, and the marriage of the Night will be Akal and Otorra."

There was a long pause. Magel hunched his shoulders. Madu said at last, rather fretfully, "Well, is that all right with everybody?"—which gave the gist, if not the glory, of the formal request for consent, usually couched in antique and ornate language.

"Yes," said Shahes, clearly.

"Yes," said Akal, manfully.

"Yes," said Temly, cheerfully.

A pause.

Everybody looked at Otorra, of course. He had blushed purple and, as they watched, turned greyish.

"I am willing," he said at last in a forced mumble, and cleared his throat. "Only—" He stuck there.

Nobody said anything.

The silence was horribly painful.

Akal finally said, "We don't have to decide now. We can talk. And, and come back to the shrine later, if . . ."

"Yes," Otorra said, glancing at Akal with a look in which so much emotion was compressed that she could not read it at all—terror, hate, gratitude, despair?— "I want to—I need to talk—to Akal."

"I'd like to get to know my brother of the Evening too," said Temly in her clear voice.

"Yes, that's it, yes, that is—" Otorra stuck again, and blushed again. He was in such an agony of discomfort that Akal said, "Let's go on outside for a bit, then," and led Otorra out into the yard, while the others went to the kitchen.

Akal knew Otorra had seen through her pretense. She was dismayed, and dreaded what he might say; but he had not made a scene, he had not humiliated her before the others, and she was grateful to him for that.

"This is what it is," Otorra said in a stiff, forced voice, coming to a stop at the gate. "It's the Night marriage." He came to a stop there, too.

Akal nodded. Reluctantly, she spoke, to help Otorra do what he had to do. "You don't have to—" she began, but he was speaking again:

"The Night marriage. Us. You and me. See, I don't— There's some— See, with men, I—"

The whine of delusion and the buzz of incredulity kept Akal from hear-

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ing what the man was trying to tell her. He had to stammer on even more painfully before she began to listen. When his words came clear to her she could not trust them, but she had to. He had stopped trying to talk.

Very hesitantly, she said, "Well, I . . . I was going to tell you. . . . The only man I ever had sex with, it was . . . it wasn't good. He made me—He did things—I don't know what was wrong. But I never have—I have never had any sex with men. Since that. I can't. I can't make myself want to."

"Neither can I," Otorra said.

They stood side by side leaning on the gate, contemplating the miracle, the simple truth.

"I just only ever want women," Otorra said in a shaking voice.

"A lot of people are like that," Akal said.

"They are?"

She was touched and grieved by his humility. Was it men's boastfulness with other men, or the hardness of the mountain people, that had burdened him with this ignorance, this shame?

"Yes," she said. "Everywhere I've been. There's quite a lot of men who only want sex with women. And women who only want sex with men. And the other way round, too. Most people want both, but there's always some who don't. It's like the two ends of," she was about to say "a spectrum," but it wasn't the language of Akal the fleecer or Otorra the carder, and with the adroitness of the old teacher she substituted "a sack. If you pack it right, most of the fleece is in the middle. But there's some at both ends where you tie off, too. That's us. There's not as many of us. But there's nothing wrong with us." As she said this last it did not sound like what a man would say to a man. But it was said; and Otorra did not seem to think it peculiar, though he did not look entirely convinced. He pondered. He had a pleasant face, blunt, unguarded, now that his unhappy secret was out. He was only about thirty, younger than she had expected.

"But in a marriage," he said. "It's different from just . . . a marriage is—Well, if I don't—and you don't—"

"Marriage isn't just sex," Akal said, but said it in Enno's voice, Enno the scholar discussing questions of ethics, and Akal cringed.

"A lot of it is," said Otorra, reasonably.

"All right," Akal said in a consciously deeper, slower voice. "But if I don't want it with you and you don't want it with me why can't we have a good marriage?" It came out so improbable and so banal at the same time that she nearly broke into a fit of laughter. Controlling herself, she thought, rather shocked, that Otorra was laughing at her, until she realized that he was crying.

"I never could tell anybody," he said.

"We don't ever have to," she said. She put her arm around his shoulders without thinking about it at all. He wiped his eyes with his fists like

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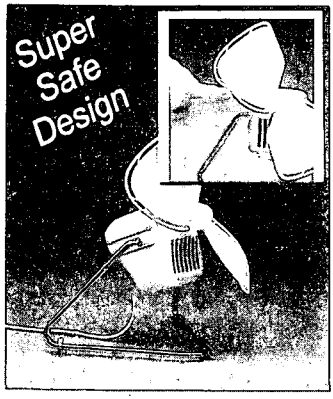

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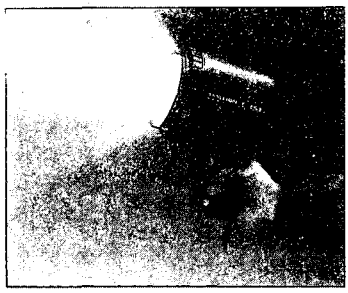

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a child, cleared his throat, and stood thinking. Obviously he was thinking about what she had just said.

"Think," she said, also thinking about it, "how lucky we are!"

"Yes. Yes, we are." He hesitated. "But . . . but is it religious . . . to marry each other knowing. . . . Without really meaning to. . . ." He stuck again.

After a long time, Akal said, in a voice as soft and nearly as deep as his, "I don't know."

She had withdrawn her comforting, patronizing arm from his shoulders. She leaned her hands on the top bar of the gate. She looked at her hands, long and strong, hardened and dirt-engrained from farm work, though the oil of the fleeces kept them supple. A farmer's hands. She had given up the religious life for love's sake and never looked back. But now she was ashamed.

She wanted to tell this honest man the truth, to be worthy of his honesty.

But it would do no good, unless not to make the sedoretu was the only good.

"I don't know," she said again. "I think what matters is if we try to give each other love and honor. However we do that, that's how we do it. That's how we're married. The marriage—the religion is in the love, in the honoring."

"I wish there was somebody to ask," Otorra said, unsatisfied. "Like that traveling scholar that was here last summer. Somebody who knows about religion."

Akal was silent.

"I guess the thing is to do your best," Otorra said after a while. It sounded sententious, but he added, plainly, "I would do that."

"So would I," Akal said.

A mountain farmhouse like Danro is a dark, damp, bare, grim place to live in, sparsely furnished, with no luxuries except the warmth of the big kitchen and the splendid bedfleeces. But it offers privacy, which may be the greatest luxury of all, though the ki'O consider it a necessity. "A three-room sedoretu" is a common expression in Okets, meaning an enterprise doomed to fail.

At Danro, everyone had their own room and bathroom. The two old members of the First Sedoretu, and Uncle Mika and his child, had rooms in the center and west wing; Asbi, when he wasn't sleeping out on the mountain, had a cozy, dirty nest behind the kitchen. The new Second Sedoretu had the whole east side of the house. Temly chose a little attic room, up a half-flight of stairs from the others, with a fine view. Shahes kept her room, and Akal hers, adjoining; and Otorra chose the southeast corner, the sunniest room in the house.

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The conduct of a new sedoretu is to some extent, and wisely, prescribed by custom and sanctioned by religion. The first night after the ceremony of marriage belongs to the Morning and Evening couples; the second night to the Day and Night couples. Thereafter the four spouses may join as and when they please, but always and only by invitation given and accepted, and the arrangements are to be known to all four. Four souls and bodies and all the years of their four lives to come are in the balance in each of those decisions and invitations; passion, negative and positive, must find its channels, and trust must be established, lest the whole structure fail to found itself solidly, or destroy itself in selfishness and jealousy and grief.

Akal knew all the customs and sanctions, and she insisted that they be followed to the letter. Her wedding night with Shahes was tender and a little tense. Her wedding night with Otorra was also tender; they sat in his room and talked softly, shy with each other but each very grateful; then Otorra slept in the deep windowseat, insisting that Akal have the bed.

Within a few weeks Akal knew that Shahes was more intent on having her way, on having Akal as her partner, than on maintaining any kind of sexual balance or even a pretense of it. As far as Shahes was concerned, Otorra and Temly could look after each other and that was that. Akal had of course known many sedoretu where one or two of the partnerships dominated the others completely, through passion or the power of an ego. To balance all four relationships perfectly was an ideal seldom realized. But this sedoretu, already built on a deception, a disguise, was more fragile than most. Shahes wanted what she wanted and consequences be damned. Akal had followed her far up the mountain, but would not follow her over a precipice.

It was a clear autumn night, the window full of stars, like that night last year when Shahes had said, "Marry me."

"You have to give Temly tomorrow night," Akal repeated.

"She's got Otorra," Shahes repeated.

"She wants you. Why do you think she married you?"

"She's got what she wants. I hope she gets pregnant soon," Shahes said, stretching luxuriously, and running her hand over Akal's breasts and belly. Akal stopped her hand and held it.

"It isn't fair, Shahes. It isn't right."

"A fine one you are to talk!"

"But Otorra doesn't want me, you know that. And Temly does want you. And we owe it to her."

"Owe her what?"

"Love and honor."

"She's got what she wanted," Shahes said, and freed her hand from Akal's grasp with a harsh twist. "Don't preach at me."

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"I'm going back to my room," Akal said, slipping lithely from the bed and stalking naked through the starry dark. "Good night."

She was with Temly in the old dye room, unused for years until Temly, an expert dyer, came to the farm. Weavers down in the Centers would pay well for fleece dyed the true Deka red. Her skill had been Temly's dowry. Akal was her assistant and apprentice now.

"Eighteen minutes. Timer set?"

"Set."

Temly nodded, checked the vents on the great dye-boiler, checked the read-out again, and went outside to catch the morning sun. Akal joined her on the stone bench by the stone doorway. The smell of the vegetable dye, pungent and acid-sweet, clung to them, and their clothes and hands and arms were raddled pink and crimson.

Akal had become attached to Temly very soon, finding her reliably good-tempered and unexpectedly thoughtful—both qualities that had been in rather short supply at Danro. Without knowing it, Akal had formed her expectation of the mountain people on Shahes—powerful, willful, undeviating, rough. Temly was strong and quite self-contained, but open to impressions as Shahes was not. Relationships within her moiety meant little to Shahes; she called Otorra brother because it was customary, but did not see a brother in him. Temly called Akal brother and meant it, and Akal, who had had no family for so long, welcomed the relationship, returning Temly's warmth. They talked easily together, though Akal had constantly to guard herself from becoming too easy and letting her woman-self speak out. Mostly it was no trouble at all being Akal and she gave little thought to it, but sometimes with Temly it was very hard to keep up the pretense, to prevent herself from saying what a woman would say to her sister. In general she had found that the main drawback in being a man was that conversations were less interesting.

They talked about the next step in the dyeing process, and then Temly said, looking off over the low stone wall of the yard to the huge purple slant of the Farren, "You know Enno, don't you?"

The question seemed innocent and Akal almost answered automatically with some kind of deceit—"The scholar that was here. . . ?"

But there was no reason why Akal the fleecer should know Enno the scholar. And Temly had not asked, Do you remember Enno, or did you know Enno, but, "You know Enno, don't you?" She knew the answer.

"Yes."

Temly nodded, smiling a little. She said nothing more.

Akal was amazed by her subtlety, her restraint. There was no difficulty in honoring so honorable a woman.

"I lived alone for a long time," Akal said. "Even on the farm where I

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grew up I was mostly alone. I never had a sister. I'm glad to have one at last."

"So am I," said Temly.

Their eyes met briefly, a flicker of recognition, a glance planting trust deep and silent as a tree-root.

"She knows who I am, Shahes."

Shahes said nothing, trudging up the steep slope.

"Now I wonder if she knew from the start. From the first water-sharing. . . ."

"Ask her if you like," Shahes said, indifferent.

"I can't. The deceiver has no right to ask for the truth."

"Humbug!" Shahes said, turning on her, halting her in midstride.

They were up on the Farren looking for an old beast that Asbi had reported missing from the herd. The keen autumn wind had blown Shahes' cheeks red, and as she stood staring up at Akal she squinted her watering eyes so that they glinted like knifeblades. "Quit preaching! Is that who you are? 'The deceiver'? I thought you were my wife!"

"I am, and Otorra's too, and you're Temly's—you can't leave them out, Shahes!"

"Are they complaining?"

"Do you want them to complain?" Akal shouted, losing her temper. "Is that the kind of marriage you want?—Look, there she is," she added in a suddenly quiet voice, pointing up the great rocky mountainside. Farsighted, led by a bird's circling, she had caught the movement of the yama's head near an outcrop of boulders. The quarrel was postponed. They both set off at a cautious trot toward the boulders.

The old yama had broken a leg in a slip from the rocks. She lay neatly collected, though the broken foreleg would not double under her white breast but stuck out forward, and her whole body had a lurch to that side. Her disdainful head was erect on the long neck, and she gazed at the women, watching her death approach, with clear, unfathomable, uninterested eyes.

"Is she in pain?" Akal asked, daunted by that great serenity.

"Of course," Shahes said, sitting down several paces away from the yama to sharpen her knife on its emery-stone. "Wouldn't you be?"

She took a long time getting the knife as sharp as she could get it, patiently retesting and rewhetting the blade. At last she tested it again and then sat completely still. She stood up quietly, walked over to the yama, pressed its head up against her breast and cut its throat in one long fast slash. Blood leaped out in a brilliant arc. Shahes slowly lowered the head with its gazing eyes down to the ground.

Akal found that she was speaking the words of the ceremony for the dead, *Now all that was owed is repaid and all that was owned, returned.*

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Now all that was lost is found and all that was bound, free. Shahes stood silent, listening till the end.

Then came the work of skinning. They would leave the carcass to be cleaned by the scavengers of the mountain; it was a carrion-bird circling over the yama that had first caught Akal's eye, and there were now three of them riding the wind. Skinning was fussy, dirty work, in the stink of meat and blood. Akal was inexpert, clumsy, cutting the hide more than once. In penance she insisted on carrying the pelt, rolled as best they could and strapped with their belts. She felt like a grave robber, carrying away the white-and-dun fleece, leaving the thin, broken corpse sprawled among the rocks in the indignity of its nakedness. Yet in her mind as she lugged the heavy fleece along was Shahes standing up and taking the yama's beautiful head against her breast and slashing its throat, all one long movement, in which the woman and the animal were utterly one.

It is need that answers need, Akal thought, as it is question that answers question. The pelt reeked of death and dung. Her hands were caked with blood, and ached, gripping the stiff belt, as she followed Shahes down the steep rocky path homeward.

"I'm going down to the village," Otorra said, getting up from the breakfast table.

"When are you going to card those four sacks?" Shahes said.

He ignored her, carrying his dishes to the washer-rack. "Any errands?" he asked of them all.

"Everybody done?" Madu asked, and took the cheese out to the pantry.

"No use going into town till you can take the carded fleece," said Shahes.

Otorra turned to her, stared at her, and said, "I'll card it when I choose and take it when I choose and I don't take orders at my own work, will you understand that?"

Stop, stop now! Akal cried silently, for Shahes, stunned by the uprising of the meek, was listening to him. But he went on, firing grievance with grievance, blazing out in recriminations. "You can't give all the orders, we're your sedoretu, we're your household, not a lot of hired hands, yes it's your farm but it's ours too, you married us, you can't make all the decisions, and you can't have it all your way either," and at this point Shahes unhurriedly walked out of the room.

"Shahes!" Akal called after her, loud and imperative. Though Otorra's outburst was undignified it was completely justified, and his anger was both real and dangerous. He was a man who had been used, and he knew it. As he had let himself be used and had colluded in that misuse, so now his anger threatened destruction. Shahes could not run away from it.

She did not come back. Madu had wisely disappeared. Akal told Shest to run out and see to the pack-beasts' feed and water.

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The three remaining in the kitchen sat or stood silent. Temly looked at Otorra. He looked at Akal.

"You're right," Akal said to him.

He gave a kind of satisfied snarl. He looked handsome in his anger, flushed and reckless. "Damn right I'm right. I've let this go on for too long. Just because she owned the farmhold—"

"And managed it since she was fourteen," Akal cut in. "You think she can quit managing just like that? She's always run things here. She had to. She never had anybody to share power with. Everybody has to learn how to be married."

"That's right," Otorra flashed back, "and a marriage isn't two pairs. It's four pairs!"

That brought Akal up short. Instinctively she looked to Temly for help. Temly was sitting, quiet as usual, her elbows on the table, gathering up crumbs with one hand and pushing them into a little pyramid.

"Temly and me, you and Shahes, Evening and Morning, fine," Otorra said. "What about Temly and her? What about you and me?"

Akal was now completely at a loss. "I thought. . . . When we talked. . . ."

"I said I didn't like sex with men," said Otorra.

She looked up and saw a gleam in his eye. Spite? Triumph? Laughter?

"Yes. You did," Akal said after a long pause. "And I said the same thing."

Another pause.

"It's a religious duty," Otorra said.

Enno suddenly said very loudly in Akal's voice, "Don't come onto me with your religious duty! I studied religious duty for twenty years and where did it get me? Here! With you! In this mess!"

At this, Temly made a strange noise and put her face in her hands. Akal thought she had burst into tears, and then saw she was laughing, the painful, helpless, jolting laugh of a person who hasn't had much practice at it.

"There's nothing to laugh about," Otorra said fiercely, but then had no more to say; his anger had blown up leaving nothing but smoke. He groped for words for a while longer. He looked at Temly, who was indeed in tears now, tears of laughter. He made a despairing gesture. He sat down beside Temly and said, "I suppose it is funny if you look at it. It's just that I feel like a chump." He laughed, ruefully, and then, looking up at Akal, he laughed genuinely. "Who's the biggest chump?" he asked her.

"Not you," she said. "How long. . . ?"

"How long do you think?"

It was what Shahes, standing in the passageway, heard: their laughter. The three of them laughing. She listened to it with dismay, fear, shame, and terrible envy. She hated them for laughing. She wanted to be

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with them, she wanted to laugh with them, she wanted to silence them. Akal, Akal was laughing at her.

She went out to the workshed and stood in the dark behind the door and tried to cry and did not know how. She had not cried when her parents were killed; there had been too much to do. She thought the others were laughing at her for loving Akal, for wanting her, for needing her. She thought Akal was laughing at her for being such a fool, for loving her. She thought Akal would sleep with the man and they would laugh together at her. She drew her knife and tested its edge. She had made it very sharp yesterday on the Farren to kill the yama. She came back to the house, to the kitchen.

They were all still there. Shest had come back and was pestering Otorra to take him into town and Otorra was saying, "Maybe, maybe," in his soft lazy voice.

Temly looked up, and Akal looked round at Shahes—the small head on the graceful neck, the clear eyes gazing.

Nobody spoke.

"I'll walk down with you, then," Shahes said to Otorra, and sheathed her knife. She looked at the women and the child. "We might as well all go," she said sourly. "If you like." ●

We appreciate comments about the magazine, and would like to hear from more of our readers. Editorial correspondence should include the writer's name and mailing address, even if you use e-mail. Letters can be e-mailed to 71154.662@compuserve.com or posted to Letters to the Editor, *Asimov's*, 1540 Broadway, New York, N.Y. 10036. Letters may be shortened and edited for publication. The e-mail address is for editorial correspondence *only*—questions about subscriptions should be directed to Box 5130, Harlan, IA 51593-5130.

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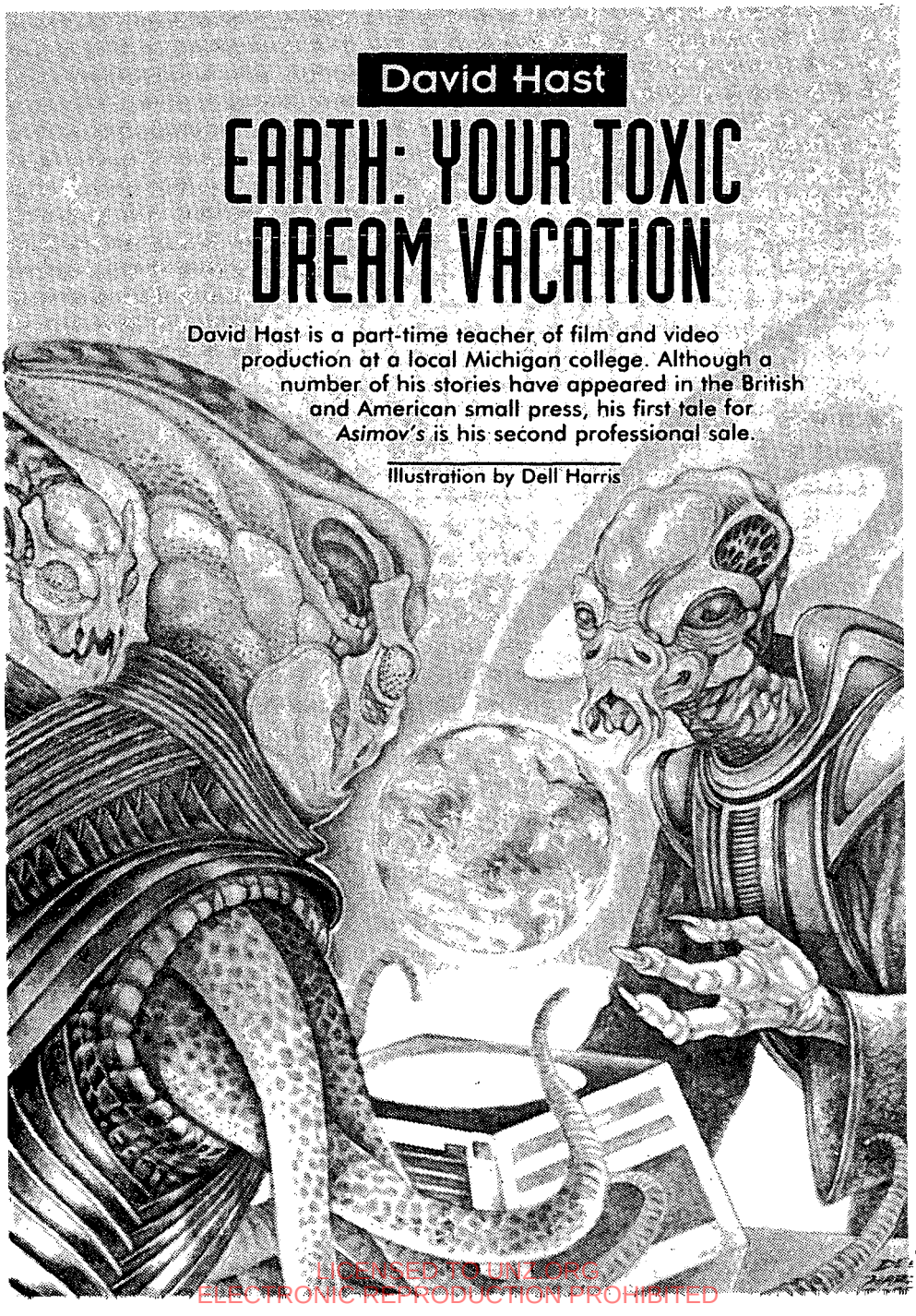
David Hast

EARTH: YOUR TOXIC DREAM VACATION

David Hast is a part-time teacher of film and video production at a local Michigan college. Although a number of his stories have appeared in the British and American small press, his first tale for *Asimov's* is his second professional sale.

Illustration by Dell Harris



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1.

This can all be yours. The legendary poison wastelands of water planet Earth have at last been cleared for charter excursions. Nova Travel, Ltd.—your exclusive guide to this virgin paradise—offers visits of two, five, and ten years' duration for the discriminating pleasure-seeker.

Our introductory tour begins just beneath the surface of the planet at a large spill of processed hydrocarbons, designated *Industrial Region 1* (see Fig. 1). Here we find the petroleum refinery, with its massive alloy tanks in which fuel is stored upon the ground, and from which it leaks (see Fig. 2).

A variety of petroleum-derived compounds and isomers feed the baths. In addition, there are numerous pockets in the aquifer where the liquid has separated into different constituents, or undergone challenging reactions. To avoid being overwhelmed by the heady mixture, we recommend you open your pores in short bursts to begin with, sampling different areas to find the ones best-suited to your tastes. Remember that concentrations will vary according to your proximity to any of the numerous leakage points at the chemical plant.

The planet's dominant species, who call themselves *Human,* are surface dwellers. They appear to be unconcerned about the spill, which forms a huge lake of gasoline beneath all the structures in this local work/sleep cluster. It is unclear why they continue to make their sleep habitats in such proximity to the industrial center, since the spill presents an explosion hazard. Perhaps, like us, they find it invigorating. Perhaps they are unaware of its existence. We will need more time to sufficiently evaluate this puzzling race.

The Humans are on an astoundingly short work/sleep cycle—a mere twenty-four hours, a single planetary day. They move around a great deal, are xenophobic and prone to agitation. With other tour companies, detection by this indigenous population might be an issue. Not with Nova Travel. We guarantee your complete privacy. Expert in diversion and ruthless in conflict, our award-winning security team holds a perfect record for client protection. Not so much as a bruised *d~tm^r* has been suffered under their vigilant watch.

Vegetation in the region is typically unhealthy (see Fig. 3). Small numbers of malformed leaves manage to half-unfold from stiffened, crusty buds. Tree bark is infested with opportunistic parasites. Deep roots draw up volatile compounds from the surface of the shallow aquifer.

Nevertheless, small stands of trees provide ample cover for our shuttle craft. You will land on the surface in groups of eight. Our drill team has already established an entry shaft—with all the accoutrements. Once into the pool, you will be free to bathe and swim its entire depths. The effects are most invigorating, and are of a mutagenic nature.

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Since we will have no way to identify our travelers by sight or by genetic profile once they have deconstructed their anatomies, we ask that each of you wear a personal genotype tag, embedded in your primary *forekx!k*. It will add no discomfort to the experience and you will quickly forget its presence. The tags double as hyperionic transmitters, so that if for some reason you are unable (or unwilling!) to return to the entry shaft, our staff will be able to retrieve you and escort you gently from the baths back to the shuttle craft.

After each bath, visitors are provided with comfortable, private collection chambers in which to expel any dysfunctional or unwanted organs and/or body parts. This is most important! We do not want another incident like the one in the *Crak!-Na^-Bleepers!* galaxy. It took much *v~xh* and a vastness of *maphryn* to set that alien society right again after they blundered across our anatomical artifacts. Like that culture, this one possesses early Stage Two cell-reading technology and will not be easily sidetracked by simple mystification, especially where physical evidence is present. Of course, we ask all our clients not to disrupt functioning indigenous technologies in order to acquire souvenirs.

2.

Nova Travel, Ltd. is proud to announce a singular development in our prestigious excursion packages to water planet Earth. This is an exclusive offer for our most valued clients—some of whom have not yet visited this paradise, others whom we would strongly encourage to return.

While tour groups have reveled, these past twenty years, in the diverse pleasures of Earth's petrochemical-saturated biosphere, our surveying and research teams have been vigilant in their efforts to expand vacation opportunities. Recently, they came upon a large cache of *phr^tc-r* gas stored in a warehouse by the military establishment of one of Earth's indigenous nations. Our veteran diplomatic staff immediately initiated dialogue with a politically powerful consortium of Humans, representing both the aforementioned military apparatus and many of the industries crucial to your vacation enjoyment.

It seems that the ecology there has begun to suffer badly. As is typical of planets pushed to Stage Two industrialization by a dominant species lacking sufficient ethical advancement, extinctions are multiplying. Many characteristics of the planet that we believed normal upon our arrival—the uneven concentrations of ozone in the upper atmosphere, the burgeoning algae populations, the dispersion of complex synthetic stimulants through agricultural soils—turn out to be of a toxic nature where most of the planet's life forms are concerned.

Our diplomats petitioned the Humans for permission to release the

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phr^tc-r gas, which some of you may know as Big Joy Juice. For the Humans, it is a deadly nerve agent. Fortunately, the ruling Humans did not allow emotional considerations to play into their decision. They seemed quite anxious to do business with us and, indeed, settled for our absurdly minimal first offer of cellular life extension and toxic vaccine technology.

With such an easy, rapid bargain struck, our diplomats felt confident they would lose nothing by broaching the subject of an outright purchase of the planet. Happily, I am able to announce to you now that such an agreement has been reached.

The Human consortium will direct our technical staff to the many storage tanks of *phr^tc-r* gas, so that we can release it into the biosphere to create a fully integrated Schedule *N^d* transformative vacation planet, free of all petty constraints, such as indigenous life forms. Soon, you will be able to revel in the sublime sensations of cerebral misfirings, metabolic dyslexia, skin sheds, cellular mutagenesis and organ decompensation anywhere on the planet.

In addition to the stores of *phr^tc-r* and other connoisseur-class compounds, a surprisingly large number of rudimentary plutonium and uranium weapons have been brought to our attention. We plan to detonate several hundred of the larger ones at the planet's polar regions soon after the gas release. For an additional fee, a private detonation can be arranged for you and your loved ones at the location of your choosing. There are ample nuclear devices, small and large, scattered across the globe, to suit all of our needs.

For full rights to Earth, the Human elites have asked for the usual trifles—the aforementioned life-extension and immunization for their primitive bodies, interstellar vehicles and technology, and a map to a virgin planet of similar characteristics to this one, where they can "start over."

Only a few thousand of the Humans will be making the journey to their new solar system, placing a negligible strain on our resources. A cargo ship will soon depart with the Human industrialists, warriors, political overlords, and their families. (Hope they don't mind third class travel!) Between Nova and you and the black pseudo-void of shallow space, we could have easily transported every higher lifeform on this planet and still come out ahead on the deal. But the Humans were new to this sort of negotiation, and it would not have been good business practice on our part to relinquish any more than we had to. Such generosity to the aliens would only have been passed on to you in higher costs for the tour—an inflationary measure the likes of which *this* tour company will continue to reject.

The remaining Humans on water planet Earth—several billion—are therefore considered part of the bargain, and most will perish in the massive release of toxic chemicals and other stimulative energy. The few that

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are left will succumb to bomb blasts and ionizing radiation. Most other life forms will also be extinguished. Their decaying biomass should really sweeten the atmospheric and bathospheric mix, for your pleasure.

Of course, all arrangements fully conform to the regulations of the Interstellar Planetary Acquisitions Administration. Our diplomats, in full compliance with same, have made the obligatory disclosures to the ruling species—and our attorneys have filed all necessary data with the IPAA's Executive Council.

Nova Travel is particularly proud of this offer—which we feel is designed not only to maximize your vacation pleasure, but to do so at a remarkably low cost. We've gotten ourselves quite a deal, and we want to pass it along to you, our esteemed friends.

We believe that Earth is about to become one of the most sought-after vacation spots in this galaxy. But we cannot hold exclusive rights to it for long; general access will inevitably be granted to other tour companies and individuals, and this offer will—regrettably—expire.

But if you act now, *you,* my lucky friend, can be among the first to partake of the newly upgraded delights of this already intoxicating destination.

With our brand new fleet of high-speed ripple ships, we can have you on Earth in the twinkle of an *uhxlot.* Picture yourself floating beneath the surface in one of Earth's magical biotoxin baths. Your skin gently sheds, your cells mutate as you patiently await *phr^tc-r* gas release. We detonate the plutonium weapons and delicious ionizing radiation soaks through the ground and washes over you. You lie back, open your pores, and you are transformed. How glorious!

So what are you waiting for? Let's burn this rock! ●

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THIS IS JUST TO SAY

This is just to say
I have eaten the hadrosaurs
that were grazing in the meadow
and which you were probably saving for further evolution.
Forgive me:
they were so tender and juicy
and also noisy;
they made my teeth itch.

This is just to say
I have gored the tyrannosaurus
that was planning to kill me
and which you probably thought
would shred me on its six-inch teeth.
it was so ugly
and had bad breath,
and I prefer being alive.

This is just to say
we have found a nest of hipsilophodons
and torn them into bloody gobbets.
Forgive us:
we are about as evolved
as we are ever going to be
and the Chixhulub meteor is on its way
to make us all extinct.

This is just to say
I have blasted a crater
the size of Hyperion
in the Yucatán peninsula.
Forgive me:
it was so green and fertile
and it was in my way.

—Mary A. Turzillo

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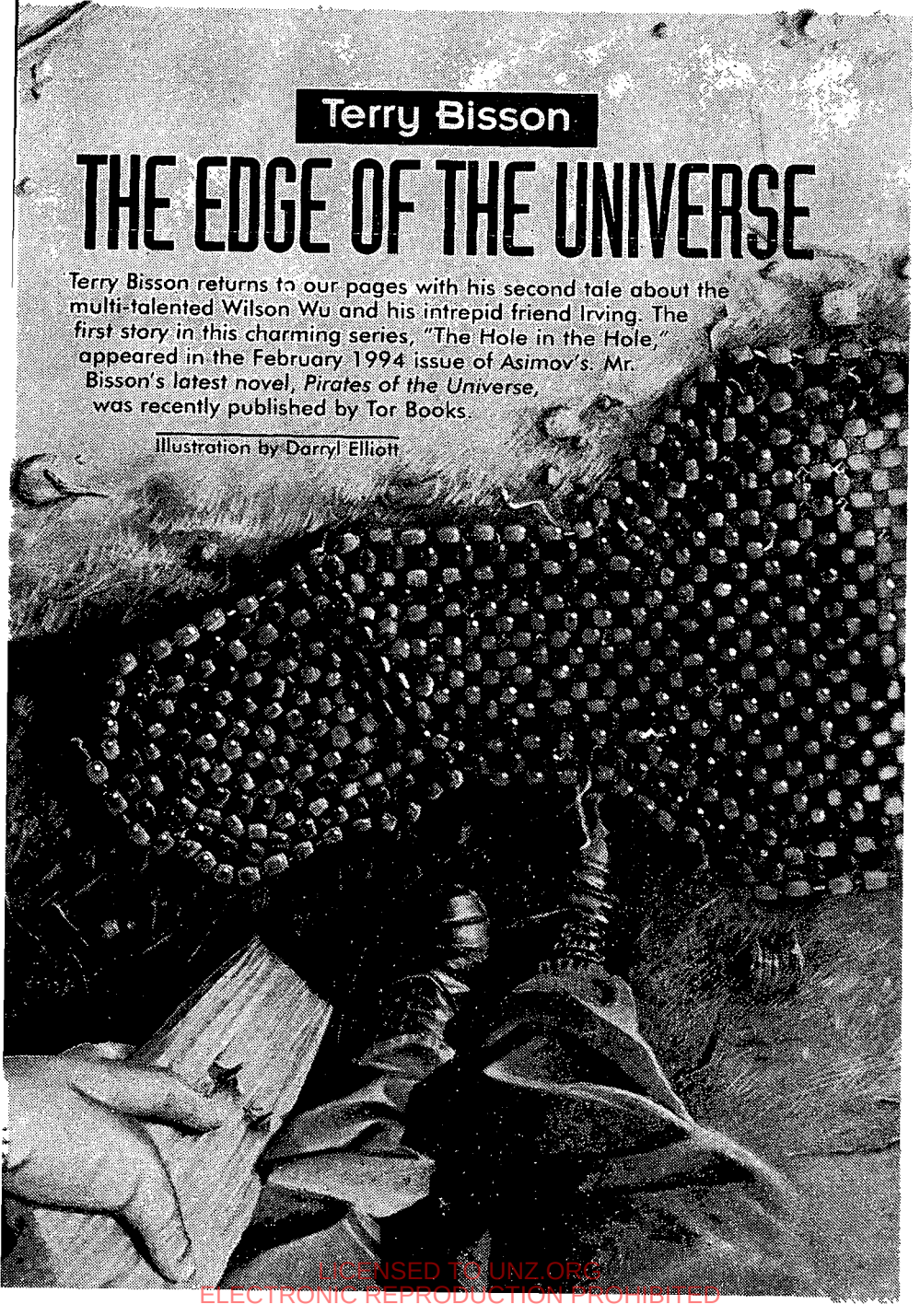
Terry Bisson

THE EDGE OF THE UNIVERSE

Terry Bisson returns to our pages with his second tale about the multi-talented Wilson Wu and his intrepid friend Irving. The first story in this charming series, "The Hole in the Hole," appeared in the February 1994 issue of Asimov's. Mr. Bisson's latest novel, Pirates of the Universe, was recently published by Tor Books.

Illustration by Darryl Elliott



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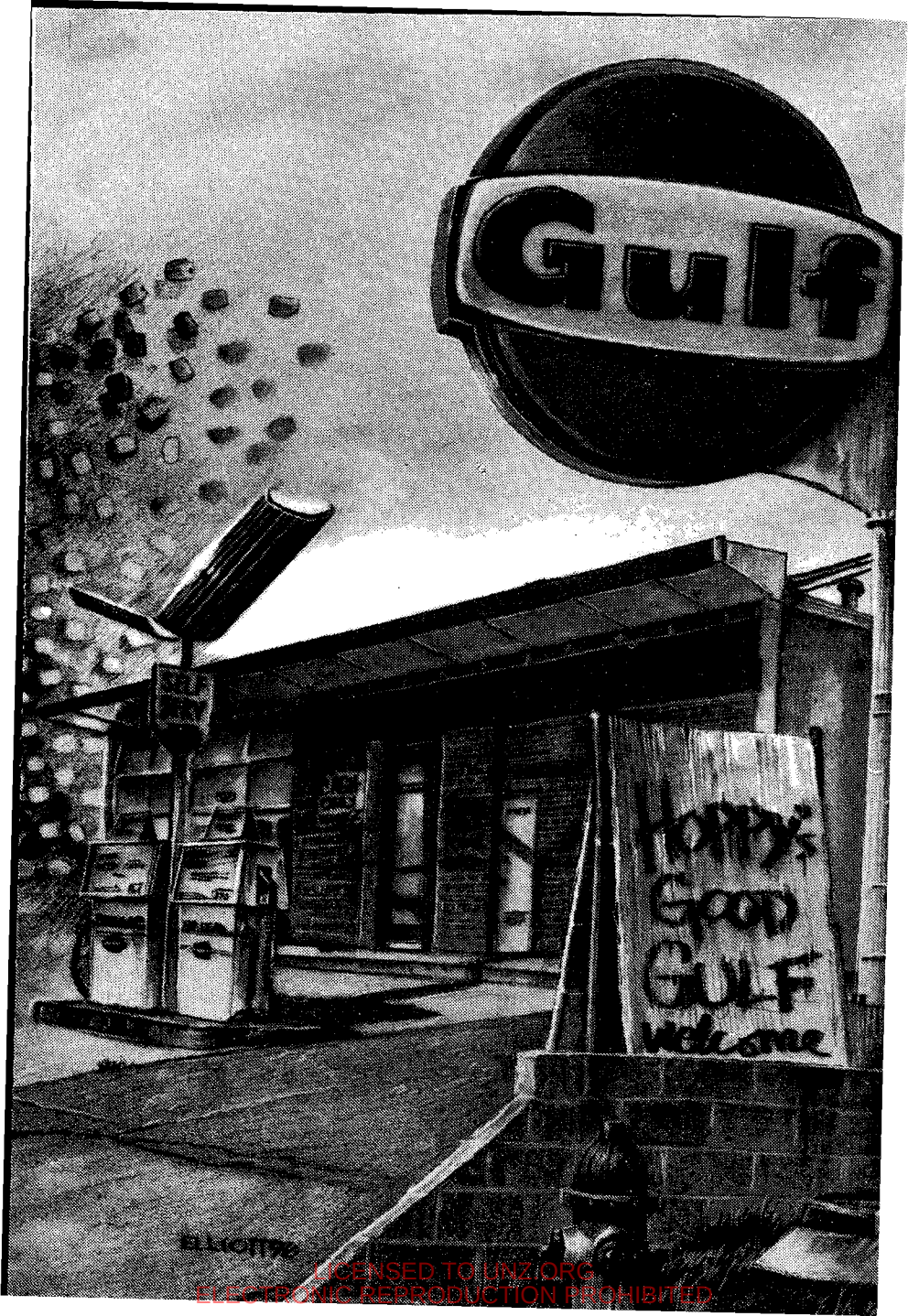

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The biggest difference I have noticed so far between the north and the South (they insist on capitalizing it) is the vacant lot; or maybe I should say, the Vacant Lot. Vacant lots in Brooklyn are grim, unappealing stretches of rubble grown over with nameless malevolent, malodorous plants, littered with roach-spotted household junk and inhabited by scabrous, scrofulous, scurrying things you wouldn't want to look at unless it were out of the corner of an eye, in passing. Vacant lots here in Alabama, even in downtown Huntsville where I live and work (if study can be called work, and if what I do can be called study), are like miniature Euell Gibbon memorials of rustic runaway edibles and roadside ornamentals—dock and pigweed, thistle and cane, poke and honeysuckle, ragweed and wisteria—in which the odd overturned grocery cart or transmission bellhousing, the occasional sprung mattress or dead dog, the tire half filled with black water, is an added attraction: a seasoning, you might say, that adds to rather than detracts from the charm of the flora. You would never cut through a vacant lot in Brooklyn unless you were being chased by a scarier-than-usual thug; in Alabama I cut across the same corner lot every day on my way from Whipper Will's law office, where I slept and studied for the bar, to Hoppy's Good Gulf where I had my own key to the men's room. I actually looked forward to my sojourns across the path and through the weeds. It was my closest regular contact with nature; or maybe I should say, Nature.

And Nostalgia, too.

One of the odd items of junk in the lot was a beaded seat cushion, of the kind much favored by New York cab drivers (particularly those from East Pakistan) back in the late 1980s, and still seen occasionally. This one had known better days, and all that was left were half a hundred or so large wooden beads strung together by twisted neoprene line in a rough sketch, as it were, of a seat; but it was enough to make it recognizable and to give me a warm hit of the Big Apple when I saw it two or three times a day. It was like hearing a horn honk or smelling a bagel. It lay half on and half off the narrow red dirt path that was my route to Hoppy's Good Gulf. I watched it gradually disintegrate, becoming every week a little less recognizable, but still familiar, like a neighborhood (or a friend) in decline. I looked forward to stepping over it several times a day, for much as I loved Candy (still do—we're almost Mr. and Mrs. now!), and was getting to *like* (at least) Alabama, I missed New York. We Brooklynites are urban animals, and what could be less urban than these faded little red brick Southern "downtowns," deserted by both people and cars? I suspect they were always somewhat sad and empty, but nowadays they are sadder and emptier than ever. Like most American towns, north *and* South, Huntsville has seen its life blood flow from the old downtown to the Bypass; from the still, dark heart to the tingling, neon-lit, encircling skin of strip malls and fast food restaurants and convenience stores and discount centers.

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Not that I'm complaining. Dead as it was, downtown suited me better than the Bypass, which is no place for a man on foot, which is what I was then: which is a whole other story, but one that might as well be told here, since it, too, is about Whipper Will, about an Edge (of town, not the universe)—

And about a U-turn.

When I moved down here from Brooklyn to be with Candy, I had sold her the Volvo P-1800 I acquired from my best friend Wilson Wu in return for helping him bring the LRV (Lunar Roving Vehicle) back from the Moon (which is also a whole other story, and one that I've told in "The Hole in the Hole"). I helped Candy maintain the car not only because I was her boyfriend—her soon-to-be-fiancé, in fact—but because the P-1800, Volvo's first and only true sports car, is a rare classic with precious idiosyncrasies that not even a Southern shade tree mechanic (and the breed has no greater admirer than I) can be expected to understand. The carburetors, for example. The Volvo's twin slide-type SUs begin to leak air after a few hundred thousand miles, and according to Wu (and he showed me the math on this—of course!), the only way to get them in sync, especially after a move to another climate, is to run the Volvo up to 4725 rpm in third gear on a 4 to 6 percent grade on a day approaching the local humidic mean (temperature not a factor), and lean them out in eighth-turn stages, alternating between one and the other, until the exhaust note makes a 12" tinfoil pie plate wedged between the frame and the transmission case sing "A." I don't have perfect pitch but I was able to borrow one of those little C-cell powered guitar tuners, and there is a long 6 percent grade on the old four-lane at the north edge of Huntsville, where it crosses the city limits and heads around the shoulder of Squirrel Ridge, the 1300 foot Appalachian remnant that dominates the northern half of the county. Since Wu's procedure requires several passes, I went early on a Sunday morning when I knew the city cops would all be in church, and (my first mistake) used the "No U-turn; for Police Only" cut-across just past the city limits to shorten my way back down. I was finished, and getting ready to take the car back into town and pick up Candy at church (Methodist) when the ash-gray "smokey" dove out of the sun, as it were, and pounced.

Police in general, and Alabama State Troopers in particular, are humorless, excessively conventional creatures, and my second mistake was trying to explain to him that I was not actually *driving* but *tuning* the car. He used my own words to charge me with six counts of the same moving violation (Illegal U-Turn). My third mistake was explaining that I was Whipper Will Knoydart's soon-to-be (for I had not yet officially proposed to Candy, for reasons that will become clear) affianced son-in-law. How was I to know that Whipper Will had once taken a shot at this particular trooper? The result of all these errors was that I was summarily

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hauled before a Justice of the Peace (church was just letting out), who let me know that Whipper Will had once called him a _____, and who then snatched away my New York driver's license and imposed a punitive three month wait before I was eligible to apply for an Alabama license.

All of which is to explain why the P-1800 was running so well; why I was on foot; and why Candy and I met for lunch in Huntsville's old downtown every (or almost every) day instead of out on the Bypass, near the Parks Department office, where she worked. It suited me fine. A New Yorker, even a car-loving Brooklynite like me, is happy on foot, and I loathe and despise the Bypass. I went through the same routine every morning: Wake up, cross the corner lot to Hoppy's Good Gulf men's room ("It's Whipper Will's Yank"), then head back to the office to wait for the mail.

I didn't even have to open it; just log it in. Whipper Will Knoydart had been a trailer park landlord for six decades, running low-rent, high-crime operations in four counties and making more enemies and fewer friends than any other man in northern Alabama. It was characteristic of the old man that his office was downtown, since he had often boasted that he wouldn't be caught dead in a mobile home, which was only suitable (according to him) for "rednecks, niggers and _____s." Because Whipper Will had retired under a financial and legal cloud—a bank of clouds, actually—his office had been sealed and secured pending a state investigation. Under the agreement worked out among the Realtor's Board, the IRS, the BATF, the DEA, and several other even less savory agencies, the premises had to be overseen by an out-of-state lawyer with no pending cases, past encounters, or conflicting interests. The fact that I was crazy in love with Whipper Will's only child wasn't considered an interest: in fact it was Candy who had recommended me for the position. Nobody else wanted it, even though the resentment of Whipper Will was softening as it sometimes softens for malefactors after they are gone. Whipper Will wasn't dead, but between Alzheimer's, prostate cancer, emphysema, and Parkinson's he was definitely fading away. He had been in the nursing home for almost nine months.

In return for answering the phone (which only rang when Candy called) and logging in the mail, I got to use the office as a place to "live" (sleep) and study for the Alabama bar. Or at least, spread out my books; or rather, book. The problem with studying was, it was a golden Alabama October, and fall is (I have discovered) the season of love for forty-somethings. I was forty-one. I'm a little older than that now, and if you think that's self-evident, it's because you haven't heard my story, which begins on the morning I noticed that the beaded seat cushion in the vacant lot was getting better instead of worse.

It was a Tuesday, a typical, that is to say beautiful, Alabama October morning. The leaves were just beginning to think about beginning to

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turn. Candy and I had been out late, parking at the Overlook on Squirrel Ridge, where I had unbuttoned all but the last little button on her uniform blouse before she stopped me with that firm but gentle touch on the back of my hand that I love so much. I had slept late, entangled in the most delicious dreams, and it was almost ten before I dragged myself off the leather couch I called a bed and stumbled, half-blind, across the corner lot to Hoppy's Good Gulf. "Whipper Will's Yank," said Hoppy, combining greeting, comment, and conversation into his usual laconic phrase. Hoppy wasn't much of a talker. "Right," I said, which was the only answer I had been able to devise. "Nuff said," he said, which was his way of signing off. On my way back across the corner lot I stepped carefully over my old friend, the beaded seat cushion, which lay in its usual place, half-on and half-off the path. Loose beads were scattered in the dirt and grass around the neoprene strings that had once held them; it was like the reversed body of a beast whose skeleton (string) was less substantial than its flesh (beads). Perhaps it was the morning light (I thought), perhaps the dew hadn't yet dried off: but I noticed that the discarded seat cushion looked, or seemed to look, a little *better* rather than a little worse that morning.

It was weird. It was jarring because it was, after all, October, with the slow, quiet, golden process of ruin evident all around; and to me, that October, there was something personally gratifying about decline and decay, which was freeing up the woman I wanted to marry. Candy had agreed the night before up on Squirrel Ridge that, since her father was finally and securely ensconced in the nursing home, it was time to think about getting married. Or at least engaged. Sometime in the next week, I knew, she was going to allow me to propose. With all the privileges that entailed.

I decided it was my imagination (or perhaps my mood) that saw the beads reassembling themselves into a seat cushion. As always, I was careful not to kick them as I went on my way. Who was I to interfere with the processes of Nature? Back at the office I found two messages on Whipper Will's ancient reel-to-reel answering machine: one from my best friend Wilson Wu announcing that he had located the Edge of the Universe, and one from Candy informing me that she would be twenty minutes late for lunch at the "Bonnie Bag." This second message worried me a little, since I could tell from the low moaning in the background that she was at Squirrel Ridge (the nursing home, not the mountain). I couldn't return either call since I didn't have outgoing, so I opened a Caffeine Free Diet Cherry Coke from Whipper Will's old-fashioned kerosene-powered office refrigerator, spread my *Corcoran's Alabama Case Law Review* on the windowsill, and fell to my studies. When I woke up it was 12:20, and I panicked for a moment, thinking I was late for lunch. Then I remembered Candy was going to be late, too.

* * *

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The Bonnie Baguette is a little sandwich shop much favored by lawyers and real estate people, most of whom tend to be old-line Huntsville folks who leave the Bypass to the NASA and university types. "I was worried," I said as Candy and I both slid into the booth at the same time. "I could tell you were calling from Squirrel Ridge, and I was afraid that . . ."

Candy looked, as always, spectacular in her neatly pressed Parks Department khakis. Some girls are pretty without meaning to be. Candy has to work at it and that makes her (for me) even more special; especially after having a wife who pretended, but only pretended, to despise her own beauty. But that's a whole other story. "Don't worry," Candy answered, cutting me off with that smile that had enticed me to Alabama in the first place, and a touch on the back of my hand that reminded me of our almost-intimacies of the night before. "I just had to sign something, that's all. A document. A formality. A DNR, in fact."

I knew what a DNR was. A Do-Not-Resuscitate order.

"It's part of the process and everything, but still, it's weird, you know?" Candy said. "It hurts. You're telling them—ordering them—not to keep your Daddy alive. To let him die."

"Candy—" It was my turn to take her hand. "Your father is ninety years old. He's got Alzheimer's. He's got cancer. His hair is white as snow. He's got no teeth left. He's had a nice life, but now . . ."

"Eighty nine," Candy said. "Daddy wasn't quite sixty when I was born, and he hasn't had a nice life. He's had a terrible life. He's been a terrible man. He's made life miserable for people in four counties. But still, he's . . ."

"He's not terrible anymore," I said. Which was true. I had never met the Whipper Will everybody hated. The man I knew was gentle and befuddled. He spent his days watching TNN and CMTV, perpetually smoothing a paper napkin across his knee as if he were petting a little white dog. "He's a sweet old man now, and his worries are pretty much over. It's your turn to have a nice life. Mine too. Which reminds me—I got a phone call from Wu! Something about that astronomy project he's working on."

"Wonderful," Candy said. She loved Wu; everybody loves Wu. "Where is he? Still in Hawaii?"

"Guess so," I said. "He didn't leave a number. Not that it matters, since I don't have outgoing."

"I'm sure he'll call back," said Candy.

At the Bonnie Baguette, you don't order when you want to; you are called on, just like in grade school. Bonnie, the owner, comes over herself, with a little blackboard on which there are five kinds of sandwich, the same every day. Actually, grade school was never that bad; they called on you but they never brought the blackboard to your desk.

"How's your Daddy?" Bonnie asked.

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"The same," said Candy. "I was out to Squirrel Ridge today—the nursing home—and they all agree he's just become the sweetest thing." She didn't say anything about the DNR.

"Amazed, I'm sure," said Bonnie. "Did I ever tell you about the time he took a shot at my Daddy? Out at Squirrel Ridge Trailer Park."

"Yes, Bonnie, you've told me, several times, but he's gotten sweeter with Alzheimer's," said Candy. "It makes some old people mean, but it made my Daddy sweet, so what can I say?"

"He also took a shot at my half-brother, Earl, out at Willow Bend Trailer Park," said Bonnie. "Called him a _____."

"We should probably go ahead and order," said Candy, "since I only get fifty-five minutes for lunch, and almost eleven are gone."

"Well, of course." Bonnie sucked her cheeks and tapped her little blackboard, ready to make chalk marks. "What'll you two lovebirds have?"

I ordered the roast beef as usual; Candy the chicken salad as usual. Each comes with a bag of chips and I got to eat both bags, as usual. "Did you hear how she called us lovebirds?" I whispered. "What say we make it official tonight? I propose I propose."

"Bonnie calls everybody lovebirds."

Candy's a sweet, old-fashioned Southern girl, a type I find fascinating because they never (contrary to myth) blush. She had her own reasons for being reluctant to allow me to propose (with all the privileges that entails). The last time Candy had been engaged, almost ten years before, Whipper Will had shown up drunk at the wedding rehearsal and taken a shot at the groom and then at the preacher, calling them both _____s, and effectively canceling the wedding and ending the engagement as well. Candy didn't want to even *hear* a proposal again until she was sure she could accept it without worrying about her old man and what he might do.

"Things are quiet, Candy. He's settled into the nursing home," I said. "We can get on with our life together. We can make plans. We can . . ."

"Soon," she said, touching my wrist lightly, gently, perfectly! "But not tonight. It's Wednesday, and on Wednesday nights we go 'grazing,' remember?"

I was in no hurry to get back to the office and study for the bar, so after Candy went back to work I stopped by the station and watched Hoppy replace the front brake pads on a Ford Taurus.

"Whipper Will's Yank," he said, as always, and as always, I replied, "Right." But today Hoppy was in a mood for conversation, and he asked, "How's old Whipper Will?"

"Just fine," I said. "Mellow. Good as gold. He just watches CMTV and TNN all day out at Squirrel Ridge. The nursing home."

"Ever tell you about the time he took a shot at me? At Sycamore Springs Trailer Park. Called me a _____."

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"Seems he took a shot at everybody," I said.

"Lucky he was such a bad shot," Hoppy said. "For a trailer park landlord, anyway. Meanest son of a bitch in four counties."

"Well, he's not mean anymore," I said. "He just watches CMTV and TNN all day out at Squirrel Ridge. The nursing home."

"Thank God for Alzheimer's," Hoppy said. "Nuff said."

He went back to work on the brakes and I strolled out into the sun and across the corner lot toward the office. I was in no hurry to start studying, so I stopped for a look at the broken-down beaded seat cushion, my little reminder of New York City. It definitely looked better. But how could that be? I knelt down and, without touching anything, counted the beads on the fourth string down from what had been, in better days, the top. There were nine wooden beads; judging by the length of the naked neoprene string, it looked like another five or six had gotten away. I wrote

9

on the back of my hand with my ballpoint, feeling almost virtuous. Next time I would *know*. I would have *evidence*. I was beginning to feel like a lawyer again.

Back at the office, I took a Caffeine Free Diet Cherry Coke out of the little refrigerator that was still crowded with Whipper Will's moonshine in pint jars. I never could figure out why he kept moonshine refrigerated. I could only guess that he didn't want to take a chance on it aging; that is, getting better.

I spread my *Corcoran's Alabama Case Law Review* on the window sill and fell to studying. When I woke up the phone was ringing.

It was Wu. "Wu!"

"Didn't you get my message?" he asked.

"I did, and it's great to hear from you, finally, but I couldn't call back," I said. "I don't have outgoing. How's the family?" Wu and his wife have two boys.

"They're back in Brooklyn. Couldn't take the weather."

"In Hawaii!?!"

"I'm at the Mauna Kea Observatory," Wu said. "We're at twelve thousand feet. It's like Tibet."

"Whatever," I said. "Well, how's business? Observe any meteors lately?"

"Remember what I told you, Irving?" Wu hardly ever calls me Irving; it usually means he's irritated. "Meteorology is not about meteors. It's about weather. My job is scheduling the observatory's viewings, which depend on the weather."

"So—how's the weather, Wu?"

"Great!" Wu dropped his voice. "Which is how come we found what I told you about." He dropped his voice further. "The Edge of the Universe."

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"Congratulations," I said. I didn't know it had been lost. "But why is it such a big secret?"

"Because of the implications. Unexpected, to say the least. Turns out we've had it in our sights for almost a month but didn't realize it because it was the wrong color."

"The wrong color?"

"The wrong color," said Wu. "You know about Hubble's constant, the red shift, the expanding universe, right?" Wu asked with such confidence that I couldn't bear to let him down.

"Sure," I said.

"Well, the universe has stopped expanding." After a pause, he added in a whisper: "In fact, according to my calculations, it's starting to shrink. What's your fax number? I'll shoot you the figures."

Whipper Will had Huntsville's—maybe even Alabama's—first fax machine. About the size of an upright piano, and not entirely electrical, it sat in the far corner of the office, against a wall where it was vented to the alley through a system of stovepipe and flex hose. I had always been reluctant to look behind its plywood sides, or under its duraluminum hood, but I understood from Hoppy (who had been called in once to fix it) that its various components were powered by an intricate and never since duplicated combination of batteries and 110, clockwork, gravity, water pressure, propane, and charcoal (for the thermal printer). No one knew who had made it, or when. I didn't even know it worked until, seconds after I gave Wu the number, I heard a relay click, and the upright fax began to groan; it began to whine. It clanked and clattered, it sputtered and roared, it spat cold steam and warm gases, and a paper fell out of the wicker IN bin, onto the floor.

It was smeared with purple stains, which I recognized from grade school as mimeo ink, and it bore a formula in Wu's hand:

$$\int_{\infty}^{0} H = \frac{(2\pi m_e)^{3/4}}{a/4^7}\, e\sqrt{\frac{\Delta\, 11 m_2}{-\,{}^1/_{K7}}}$$

"What's this?" I asked.

"Just what it looks like. Hubble's constant inconstant: reversed, confused, confounded," Wu said. "You'll note that the red shift has turned to blue, just like in the Elvis song."

"That's blue to gold," I said. " 'When my Blue Moon turns to Gold Again.' "

"Irving, this is more important than an Elvis song," he said (rather self-righteously, I thought, since it was he who had brought up Elvis in the

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first place). "It means that the universe has stopped expanding and started to collapse in on itself."

"I see," I lied. "Is that—good or bad?"

"Not good," Wu said. "It's the beginning of the end. Or at least the end of the beginning. The period of expansion that began with the Big Bang is over, and we're on our way to the Big Crunch. It means the end of life as we know it; hell, of existence as we know it. Everything in the universe, all the stars, all the planets, all the galaxies—the Earth and everything on it from the Himalayas to the Empire State Building to the Musée d'Orsay—will be squashed into a lump about the size of a tennis ball."

"That does sound bad," I said. "When's this Crunch thing going to happen?"

"It will take a while."

"What's a while?" I couldn't help thinking of Candy, and our plans to get married (even though I hadn't yet officially proposed).

"Eleven to fifteen billion years," said Wu. "By the way, how's Candy? Are you two engaged yet?"

"Almost," I said. "We're going 'grazing' tonight. As soon as her father's settled in the nursing home, I get to pop the question."

"Congratulations," Wu said, "Or maybe I should say pre-congratula—whoooops! Here comes my boss. I'm not supposed to be using this line. Give my best to Candy. What's 'grazing' anyway. . . ?"

But before I could answer, he was gone. Everybody should have a friend like Wilson Wu. He grew up in Queens and studied physics at Bronx Science, pastry in Paris, math at Princeton, herbal medicine in Hong Kong and law at either Harvard or Yale (I get them confused). He worked for NASA (Grumman, anyway), then Legal Aid. Did I mention that he's six foot two and plays guitar? We lived on the same block in Brooklyn where we both owned Volvos and went to the Moon. Then I met Candy and moved to Alabama, and Wu quit Legal Aid and got a degree in meteorology.

Which is *not* about meteors.

The Saturn Five SixPlex, in the Apollo Shopping Center on the Huntsville Bypass, with its half dozen identical theaters half-guarded by bored teens, is perfect for "grazing," an activity invented by Candy and her friends some fifteen years ago, when the multiplexes first started hitting the suburbs of the bigger Southern towns. The idea, initially, was to make dating more flexible, since teen girls and boys rarely liked the same movies. Later, as Candy and her friends matured, and movies continued their decline, the idea was to combine several features into one full-featured (if you will) film. When you go "grazing" you wear several sweaters and hats, using them to stake out seats and to change your appearance as you duck from theater to theater. Dates always sit together when in the same theater, but "grazing" protocol demands that you never pressure your date into staying—or leaving. Boys and girls come and

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go as they wish, sometimes together, sometimes apart. That Wednesday night there was a teen sex comedy, a tough love ladies' weeper, a lawyer in jeopardy thriller, a buddy cop romance, a singing animal musical cartoon, and a terror thug "blow-em-up." The films didn't run in the same time continuum, of course, and Candy and I liked to graze backward; we began with the car bombs and angled back across the hall (and across Time) for the courtroom confession, then split up for the singing badgers (me) and Whoopi's teary wisecracks (Candy) before coming together for teens' nervous first kiss. "Grazing" always reminds me of the old days before movies became an art, when "the picture show" in Brooklyn ran in a continuous loop and no one ever worried about Beginnings or Ends. You stayed till you got to the part where you came in, then it was over. "Grazing is a lot like marriage, don't you think?" I whispered.

"Marriage?" Candy asked, alarmed. We were together, watching the cops question a landlady. "Are you pressuring me?"

"I'm not proposing," I said. "I'm making a comment."

"Comments about movies are allowed. Comments about marriage are considered pressuring."

"My comment is about grazing," I said. "It's about . . ."

"Sssshhhh!" said the people behind us.

I lowered my voice. ". . . about being together some of the time and apart some of the time. About entering together and leaving together. About being free to follow your own tastes yet always conscious that there is a seat saved for you beside the other."

I was crazy about her. "I'm crazy about you," I whispered.

"Sssshhhh!" said the couple behind us.

"Tomorrow night," Candy whispered, taking my hand. Then she held it up so that it was illuminated by the headlights of a car chase. "What's this?" She was looking at the number on the back of my hand.

"That's there to—remind me of how much I love you," I lied. I didn't want to tell her what it really was; I didn't want her to think I was crazy.

"Only six?"

"You're holding it upside down."

"That's better!"

"Ow!"

"Sssssshhhhhh!" said the couple behind us.

We skipped all the titles and credits but caught all the previews. Candy dropped me off at midnight at the Good Gulf men's room. Walking "home" to Whipper Will's office across the corner lot, I looked up at the almost-full moon and thought of Wu on his Hawaiian mountaintop. There were only a few stars; maybe the universe *was* shrinking. Wu's figures, though I could never understand them, were usually right. What did I care, though? A few billion years can seem like eternity when you're young, and forty-one isn't old. A second marriage can be like a second

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youth. I stepped carefully over my old friend, the beaded seat cushion, who looked better than ever in the moonlight; but then, don't we all?

It was almost ten o'clock before I awoke the next morning. I made my way to Hoppy's Good Gulf, staggering a little in the sunshine. "Whipper Will's Yank," Hoppy said from the repair bay where he was replacing the front brake pads on another Taurus. "Right," I muttered, and he replied "Nuff said" behind me, as I made my way back outside and started across the corner lot.

I stopped at the beaded seat cushion. It definitely looked better. There seemed to be fewer loose beads scattered in the weeds and on the path. There seemed to be fewer naked, broken neoprene strings and bare spots on the seat cushion.

But I didn't have to guess. I had evidence.

I checked the number on the back of my hand: 9.

I counted the beads four rows down from the top: 11.

I checked both again and it came out the same.

It was creepy. I looked around in the bushes, half expecting to see giggling boys playing a joke on me. Or even Hoppy. But the bushes were empty. This was downtown on a school day. No kids played in this corner lot anyway.

I spit on my thumb and rubbed out the nine and walked on back to the office. I was hoping to find another message from Wu, but there was nothing on the machine.

It was only ten thirty, and I wasn't going to see Candy until lunch at the Bonnie Bag, so I opened a can of Caffeine Free Diet Cherry Coke and spread out my *Corcoran's*. I was just starting to doze off when Whipper Will's ancient upright fax machine clicked twice and wheezed into life; it sputtered and shuddered, it creaked and it clanked, it hissed and whistled and then spat a smeared purple mimeo sheet on the floor, covered with figures:

$$\frac{Q}{H} = \frac{17\pi}{\Delta \cdot 9x}\left(\frac{C400}{WAP}\right)_n^4 \sum_{-kT}^{dx} \Big/ \frac{\cos 3}{\Delta 33} \sim \infty$$

As soon as it cooled, I picked it up and smoothed it out. I was just about to put it with the other one when the phone rang.

"Well?" It was Wu.

"More Big Crunch?" I was guessing, of course.

"You must be holding it upside down," Wu said. "The figures I just sent are for the Anti Entropic Reversal."

"So I see," I lied. "Does this reversal mean there won't be a Big Crunch after all?" I wasn't surprised; it had always sounded more like a breakfast cereal than a disaster.

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"Irving!" Wu said. "Look at the figures more closely. The AER leads up to the Big Crunch; it *makes* it happen. The universe doesn't just shrink, it rewinds. It goes backward. According to my calculations, everything will be running in reverse for the next eleven to fifteen billion years, from now until the Big Crunch. Trees will grow from ashes to firewood to oak to acorn. Broken glass will fly together into window panes. Tea will get hot in the cup."

"Sounds interesting," I said. "Could even be handy. When does all this happen?"

"It's already started," said Wu. "The Anti Entropic Reversal is going on right now."

"Are you sure?" I felt my Caffeine Free Diet Cherry Coke. It was getting warmer, but shouldn't it be getting colder? Then I looked at the clock. It was almost eleven. "Things aren't going backward here," I said.

"Of course not, not yet," Wu said. "It begins at the Edge of the Universe. It's like a line of traffic starting up, or the tide turning; first it has to take up the slack, so in the beginning it will seem like nothing is happening. At what point does the tide turn? We may not notice anything for several thousand years. A blink of the eye in cosmic time."

I blinked. I couldn't help thinking of the beaded seat cushion. "But wait. Is it possible that something here *could* already be going backward," I asked. "Rewinding?"

"Not very likely," Wu said. "The universe is awfully big, and . . ."

Just then I heard a knock. "Gotta go," I said. "There's somebody at the door."

It was Candy, in her trim Parks Department khakis. Instead of giving me, her soon-to-be-fiancé, a kiss, she walked straight to the little kerosene-powered office refrigerator and opened a Caffeine Free Diet Cherry Coke. I knew right away that something was wrong, because Candy loathes and despises Caffeine Free Diet Cherry Coke.

"Aren't we meeting for lunch?" I asked.

"I got a call a few minutes ago," she said. "From Squirrel Ridge, the nursing home. Daddy hit Buzzer."

I tried to look grave; I tried to hide my guilty smile. In my wishful thinking I thought I had heard "hit the buzzer" and figured it was a local variant of "kick the bucket." I crossed the room and took Candy's hand. "I'm so sorry," I lied.

"You're not half as sorry as Buzzer is," Candy said, already dragging me toward the door. "He's the one with the black eye."

Squirrel Ridge, the nursing home, sits in a hollow just north and east of Huntsville, overlooked by Squirrel Ridge, the mountain. It's a modern, single-story establishment that looks like a grade school or a motel, but smells like—well, like what it is. The smell hits you as soon as you walk

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in the door: a dismaying mix of ordure and disorder, urine and perfume, soft food and damp towels, new vomit and old sheets, Beech-nut and Lysol pine. Next, the sounds hit you: scuffing slippers, grunts and groans, talk show applause, the ring of dropping bedpans, the creak of wire-spoked wheels—broken by an occasional panicked shout or soul-chilling scream. It sounds as if a grim struggle is being fought at intervals, while daily life shuffles on around it. And indeed it is. A struggle to the death.

I followed Candy to the end of a long hall, where we found her father in the dayroom, smiling sweetly, strapped in a chair in front of a TV watching Alan Jackson sing and pretend to play the guitar. "Good morning, Mr. Knoydart," I said; I could never bring myself to call him Whipper Will. As I've said, I had never known the Whipper Will who was the terror of trailer parks in four counties. The man I knew, the man before us, was large but soft—beef gone to fat—with no teeth and long, thin white hair (which looked, this morning, a little grayer than usual). His pale blue eyes were fixed on the TV, and his fingers were busy stroking a paper napkin laid across his knee.

"What happened, Daddy?" Candy asked, touching the old man's shoulder tentatively. There was, of course, no answer. Whipper Will Knoydart hadn't spoken to anyone since he had been admitted in January, when he had called the Head Nurse, Florence Gaithers, a "stupid pissant, a bitch, and a _____," and threatened to shoot her.

"I was helping him out of his wheelchair to go to the bathroom, and he just up and slugged me."

I turned and saw a skinny young black man in whites, standing in the doorway. He wore a diamond stud in his nose and he was dabbing at a black eye with a wet rag.

"He got this look in his eye. Called me a _____, (excuse me!) and then he up and hit me. It was almost like the old Whipper Will."

"Sorry, Buzzer. Thanks for calling me instead of Gaithers."

"It's no big deal, Candy. Old folks with Alzheimer's have inci*dent*s." Buzzer pronounced it with the accent on the *dent*. "Gaithers would just get all excited."

"Buzzer," said Candy. "I want you to meet—" I was hoping she would introduce me as her soon-to-be-fiancé, but I was disappointed. I was introduced as her "friend from New York."

"Whipper Will's Yank," said Buzzer, nodding. "I heard about him."

"Sorry about your eye," said Candy. "And I do appreciate your not calling Gaithers. Can I buy you a steak to put on it?"

"I'm a vegetarian," said Buzzer. "Don't you worry about it, Candy. Your daddy's not so bad, except for this one inci*dent*. He lets me wash him and walk him around every morning just as sweet as anything, don't you Mister Knoydart? And we watch TNN together. He calls me whenever Pam

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Tillis comes on, don't you Mr. Knoydart? He wasn't always so sweet, though. Why, I remember one time he took a shot at my mother, when we lived out at Kyber's Creek Trailer Park. Called her a _____. Excuse me, but he did."

"Buzzer and I are old friends," Candy explained as we went back out to the car. "He was the first Black kid in my Junior High, excuse me, African American, or whatever, and I was Whipper Will's daughter, so we were outcasts together. I looked after him and he's still looking after me. Thank God. If Gaithers finds out Daddy's acting up, she'll kick him out of Squirrel Ridge for sure, and I won't have any place to put him, and we'll be back to square one, and how would that be?"

"Bad," I said.

"Well, hopefully it's over. Just an inci*dent*." She said it the same way as Buzzer.

"Hope so," I said.

"Funny thing is, didn't you think Daddy looked better?"

"Better?"

"I think Buzzer's been putting Grecian Formula on his hair. Buzzer always wanted to be a hairdresser. This nursing home thing is just a sideline."

We had managed to miss lunch. We made a date for dinner and "a drive" (tonight was to be my night to pop the question), and Candy dropped me at the office. It was only three o'clock, so I opened a Caffeine Free Diet Cherry Coke and spread out my *Corcoran's* on the window sill, determined to make up for lost time. I was awakened by a rhythmic clacking, jacking, cracking, snorting, cavorting noise, and a faint electrical smell. The floor was shaking. Whipper Will's upright fax machine was spitting out a sheet of purple ink smeared paper, which drifted to the floor.

I picked it up by one corner and studied it while it cooled—

$$55 = \left[\frac{H}{32\pi}\ d\ \text{string}\ (14)\right]^{1/4} > t^{1/2} \int_{0-0}^{0}$$

But before I could figure out what it meant (I knew, of course, who it was from), the phone rang. "There's the answer to your question," Wu said.

"What question?"

"You asked me if something here could already be going backward."

"Not there," I said. "Here."

"By here I mean here on Earth!" Wu said. "And as my calculations show, it is theoretically possible. Perhaps even inevitable. You know about superstrings, right?"

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"Sort of like superglue or supermodels?" I ventured.

"Exactly. They hold the universe together, and they are stretched to the limit. It's *possible* that harmonic vibrations of these superstrings *might* shake loose discrete objects, so that they would appear as bubbles or reversals in local entropic fields."

"Fields? What about vacant lots?" I told Wu about the beaded seat cushion.

"Hhhmmmmm," said Wu. I could almost hear his brain whirring. "You *may* be on to something, Irv. Superstring harmonic overtones *could* be backtracking my sightline from the Edge of the Universe, and then following our fax and phone connections. The same way glass breaks along a line when you score it. But we have to be sure. Send me a couple of pictures, so we can *quantify* the . . . oooooops!" His voice dropped to a whisper. "Here comes my boss. Say hi to Candy. I'll call you later."

There was still plenty of afternoon light, so as soon as Wu hung up, I headed across the corner lot to Hoppy's Good Gulf and borrowed the Polaroid he uses to photograph accident scenes. As I took the picture, I *quantified* for myself, by counting. The eleven beads on row four had increased to thirteen, and the other rows also seemed to be much improved. There weren't many beads laying in the dirt. The seat cushion looked almost good enough to put in my car, if I had one.

It was creepy. I didn't like it.

I returned Hoppy's camera and took the long way back to the office, trying to make sense of it all. Were the falling leaves going to float back up and fasten themselves to the trees? Was Candy's Volvo going to have four speeds in reverse? I got so confused just thinking about it that I put the photo into the wicker OUT tray of Whipper Will's upright fax machine before I remembered—I guess realized is the word—that I had no outgoing. I could talk to Wu on the phone (when he called me) but I couldn't fax him anything.

Perversely, I was glad. I had done what I could, and now I was tired. Tired of thinking about the universe. I had an important, indeed a historic, date coming up—not to mention a bar exam to study for. I opened a Caffeine Free Diet Cherry Coke, spread my *Corcoran's* on the windowsill, and lost myself in pleasant dreams. Mostly of Candy and that last little uniform button.

A Huntsville Parks Department professional has many obligations that run past the normal nine-to-five. Some of them are interesting, some even fun, and since Candy loves her job, I try to accommodate (which means accompany) her whenever possible. That night we had to stop by the North Side Baptist Union Fish Fry and Quilt Show, where Candy was the Guest of Honor in her neatly pressed, knife-creased khakis. The

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fish was my favorite, pond-raised cat rolled in yellow corn meal, but I couldn't relax and enjoy myself. I kept thinking of later; I was in a hurry to get up on Squirrel Ridge, the mountain. But one good thing about Baptists, they don't last long, and by 9:15 Candy and I were parked up at the Overlook. It was a cool night and we sat out on the warm, still-ticking hood of the P-1800 with the lights of the valley spread out below us like captured stars. My palms were sweating. This was to be the night I would propose, and hopefully she would accept, with all the privileges that entails.

I wanted the evening to be memorable in every way, and since there was supposed to be a full moon, I waited for it to rise. As I watched the glow on the eastern horizon, I thought of Wu and wondered if the moon would rise in the west after the "Reversal." Would anyone notice the difference? Or would folks just call the west the east and leave it at that?

It was too deep for me to figure out, and besides—I had other things on my mind. As soon as the moon cleared the horizon, I got off the hood and dropped to my knees. I was just about to pop the question, when I heard a *beep beep*.

"What's that?" I asked.

"Buzzer," said Candy.

"Sounds like a beeper."

"It is. Buzzer loaned me his beeper," she said, reaching down to her waist and cutting it off.

"What for?"

"You know what for."

There are no phones up on Squirrel Ridge, so we high-tailed it down the mountain with the SUs howling and the exhaust barking, alternately. Candy's big fear was alerting Gaithers, who was on duty that night, so we rolled into the parking lot of Squirrel Ridge, the nursing home, with the lights off. I stayed with the P-1800 while Candy slipped in through a side door.

She was back in half an hour. "Well?" I prompted.

"Daddy hit Buzzer," she said (or I *thought* she said) as we drove out of the lot as quietly as possible. "It's cool, though. Buzzer didn't say anything to Gaithers. This time. I figure we've got one more strike. Three and we're out."

"Where'd he hit him this time?"

"Not hit," she said. "*Bit*."

"But your daddy doesn't have any teeth!"

Candy shrugged. "Seems he does now."

And that was it for what I had hoped would be one of the biggest evenings of my life. My proposal, with its acceptance, with all the privileges that entails—none of it was to be. Not that night. Candy needed her

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sleep since she had to leave early in the morning for the annual statewide all-day Parks Department meeting in Montgomery. She dropped me off at Hoppy's Good Gulf, and I took a long walk, which is almost as good as a cold shower. It takes only twenty minutes to cover every street in downtown Huntsville. Then I went back to the office, cutting through the corner lot. In the light of the full moon, the beaded seat cushion looked almost new. The top rows of beads were complete, and there were only a few missing on the lower section. I resisted the urge to kick it.

There were two messages on Whipper Will's ancient reel-to-reel answering machine. The first was just heavy breathing. A random sexual harassment call, I figured. Or a wrong number. Or maybe an old enemy of Whipper Will's; most of Whipper Will's enemies were old.

The second message was from Candy. She had beaten me home. "This is going to be an all-day conference tomorrow," she said. "I won't get home till late. I gave your number to Buzzer, just in case. You know what I mean. When I get home, we'll take care of our *unfinished business*." She signed off with a loud smooching sound.

It was midnight but I couldn't sleep. I kept having these horrible thoughts. I opened a Caffeine Free Diet Cherry Coke and spread my *Corcoran's* out on the window ledge, overlooking the empty street. Was there ever a downtown as quiet as downtown Huntsville? I tried to imagine what it had looked like before the Bypass had bled away all the business. I must have fallen right to sleep, for I had a nightmare about downtown streets crowded with newlyweds walking hand in hand. And all the newlyweds were old. And all the newlyweds had teeth.

The next morning I woke up thinking about the beaded seat cushion. I decided I needed another picture for Wu, to make it a before and after. After my morning ablutions in the Good Gulf men's room, I found Hoppy in the repair bay, fixing the front brakes on yet another Taurus. "Whipper Will's Yank," he said.

"Right," I said. I asked to borrow the Polaroid again.

"It's in the wrecker."

"The wrecker's locked."

"You have the key," Hoppy said. "Your men's room key. One key does everything around here. Keeps life simple. Nuff said."

I waited until Hoppy was busy before I took the camera out into the corner lot and photographed the beaded seat cushion. I didn't want him to think I was nuts. I printed the picture and put the camera away, then hurried back to the office and placed the new photo next to the old one in the wicker OUT bin of Whipper Will's ancient upright fax machine. If I had ever doubted my own eyes (and who doesn't, from time to time?) I was convinced now. I had photographic evidence. The beaded seat cushion was in *much* better shape in the second photo than in the first, even

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though they were less than twenty-four hours apart. It was un-decaying right before my eyes.

I kept having these horrible thoughts.

At least there were no messages on the answering machine. Nothing from Buzzer.

Even though I couldn't concentrate, I knew I needed to study. I opened a Caffeine Free Diet Cherry Coke and spread my *Corcoran's* on the window sill. When I woke up it was almost noon and the floor was shaking; the fax machine was huffing and puffing, creaking and groaning, rattling and whining. It stopped and started again, louder than ever. A sheet of paper fluttered down from the IN bin. I caught it, still warm, before it hit the floor—

$$\lambda = \frac{0.693}{M^{1/3}} \left(\frac{40}{\sqrt{3^{1/2}}}\right) > \frac{3 \times 10^{7}}{\Omega} \propto T$$

While I was still trying to decipher it, I realized the phone was ringing.

I picked it up with dread; I whispered, "Buzzer?" assuming the worst.

"Buzzer?" It was Wu. "Are you impersonating a device, Irving? But never mind that, I have a more important question. Which one of these Polaroids is number one?"

"What Polaroids? You *got* them? That's impossible. I never faxed them. I don't have outgoing!"

"Seems you do now," Wu said. "I was faxing you my newest calculations, just now, and as soon as I finished, here came your Polaroids, riding through on the self-checking backspin from the handshake protocol, I guess. You forgot to number them, though."

"The crummy one is number two," I said. "The crummier one is number one."

"So you were right!" Wu said. "It's going from worse to bad. Even in downtown Huntsville, light years from the Edge, the universe is already shrinking in isolated anti-entropic bubble fields. Anomalous harmonic superstring overtones. The formula I just faxed through, as I'm sure you can see, confirms the theoretical *possibility* of a linear axis of the Anti-Entropic Reversal Field following a superstring fold from the Edge of the Universe to downtown Huntsville. But observation is the soul of science, and by using your Polaroids, now I will be able to mathematically calculate the . . ."

"Wu!" I broke in. Sometimes with Wu you have to break in. "What about people?

"People?"

"People," I said. "You know. Humans. Like ourselves. Bipeds with cars, for Christ's sake!" Sometimes Wu was impossible.

"Oh, *people*," he said. "Well, people are made of the same stuff as the

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rest of the universe, aren't they? I mean, *we*. The Anti Entropic Reversal means that we will live backward, from the grave to the cradle. People will get younger instead of older."

"When?"

"When? When the Anti Entropic Reversal Wave spreads back, from the Edge through the rest of the universe. Like the changing tide. Could be several thousand years; could be just a few hundred. Though, as your seat cushion experiment demonstrates, there may be isolated bubbles along the linear axis where . . . whoops! Here comes my boss," Wu whispered. "I have to get off. Give my best to Candy. How's her dad, by the way?"

Wu often signs off with a question, often unanswerable. But this one was more unanswerable than most.

Lunch at the Bonnie Bag was strange. I had a whole booth to myself. Plus a lot on my mind. "Where's Candy?" Bonnie asked.

Montgomery, I told her.

"The State capital. That lucky dog. And how's Whipper Will? Still sweet as ever?"

"I sure hope so," I said.

"Did I ever tell you about the time he took a shot at my . . ."

"I think so," I said. I ordered the chicken salad, just for the adventure of it. Plus two bags of chips.

Back at the office, I found two messages on the reel-to-reel answering machine. The first was heavy breathing. The second was ranting and raving. It was all grunts and groans and I figured it was probably one of Whipper Will's old enemies. The only words I could make out were "pissant" and "kill" and "shoot."

Nothing from Buzzer, thank God.

I opened a Caffeine Free Diet Cherry Coke and spread my *Corcoran's* on the windowsill. I kept having these horrible thoughts, and I knew the only way to get rid of them was to study for the bar. When I woke up it was getting dark. The phone was ringing. I forced myself to pick it up.

"Buzzer. . . ?" I whispered, expecting the worst.

"Buzzzzzzzzz!" said Wu, who sometimes enjoys childish humor. But then he got right down to business. "How far apart are these two Polaroids?" he asked.

"In time?" I did some quick figuring. "Eighteen and three quarter hours."

"Hmmmmmmm. That checks out with my rate of change figures," he said. "Mathematics is the soul of science, and beads are easier to count than stars. By counting the beads, then subtracting, then dividing by the phase of the moon over eighteen and three quarters, I can calculate the exact age of the universe. Are you on Central or Eastern Standard time?"

"Central," I said. "But Wu . . ."

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"Perfect! If I get a Nobel, remind me to share it with you, Irv. The exact age of the universe, from the Big Bang until this instant is . . ."

"Wu!" I broke in. Sometimes with Wu you have to break in. "I need your help. Is there any way to reverse it?"

"Reverse what?"

"The contraction, the Anti-Entropic Reversal or whatever."

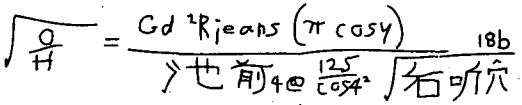
"Turn around the universe?" He sounded almost offended.

"No, just the little stuff. The anomalous harmonic superstring overtones."

"Hmmmmmm." Wu sounded intrigued again. "Locally? Temporarily? Maybe. If it is all on strings . . ." I couldn't tell if he was talking about the beaded seat cushion or the universe.

Whipper Will's upright fax machine grumbled. It rumbled. It growled and it howled. The floor shook and the wall creaked and a warm sheet of paper came out of the IN bin and fluttered toward the floor.

I caught it; I was getting good at catching them.



"What's with the Chinese?" I asked.

"Multi-cultural synergy," Wu said. "I've combined my calculations of the relative linear stability of the remote Anti Entropic Fields on the superstring axes, with an ancient Tien Shan spell for precipitating poisons out of a well so that camels can drink. A little trick I picked up in school."

"Medical school?"

"Caravan school," said Wu. "It's temporary, of course. It'll only last a few thousand years. And you'll have to use an Anti-Entropic Field Reversal Device."

"What's that?"

"Whatever's handy. A two-by-four, a jack handle. All it takes is a short sharp shock. The problem is, there's no way to tell what other effects might . . . whoooops!" His voice dropped. "Here comes my boss—"

After Wu hung up I sat by the window, waiting for night to fall. Waiting for Buzzer to call. I kept having these horrible thoughts.

When it was dark, I walked downstairs and into the corner lot. I carried a short length of 2x4 with me. I squared off and hit the ground beside the beaded seat cushion, just once. A short, sharp shock. Then again, on the other side. Another short, sharp shock. I resisted the urge to destroy it with a kick; it was an experiment, after all.

I tossed the 2x4 into the weeds. The moon was rising (still in the east) and a dog and a cat were standing side by side on the path, watching me.

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As they trotted off together, still side-by-side, a chill gripped my heart. What if I had made things worse?

Hoppy's Good Gulf was closed. I used the men's room and went back to the office. There were two messages on the machine. The first was a voice I had never heard, but I knew exactly who it was. "Where is that vicious pissant daughter of mine? Are you listening to me, bitch? I swore by God if you ever put me in a nursing home I would kill you, and by God I will!"

The second message was from Buzzer. "We've got a problem here, Yank," he said. "The old man is uncontrollable. He threw a chair through a glass door and got into Gaithers's office, and now—"

There was a sound of more glass breaking, and a scream, and a thud. I heard a *beep* and I realized that the message was over.

The phone was ringing. I picked it up and heard the first voice again, but this time it was live: "You devil pissant bitch bastard! Where is my Oldsmobile? Did you give it to this nursing home nigger?"

I heard Buzzer shout, "No!"

"You fucking _____!"

Then I heard a shot. I hung up the phone and ran out the door, into the night.

When you haven't driven for a while, it can seem almost like a thrill. I wasn't worried about the police; I figured they wouldn't stop Hoppy's Good Gulf wrecker, as long as they didn't notice who was driving. So I turned on the red light and drove like a bat out of hell on the four lane toward Squirrel Ridge, the nursing home.

I left the truck in the lot with the engine running and the red light spinning. I found Whipper Will in Gaithers's office. He had gotten the gun out of her desk. It was a brand new pearl-handled .38, a ladies' special. Whipper Will was holding it on Buzzer, who sat bolt upright behind the desk in one of those rolling office chairs. There was a bullet hole in the wall just to the left of Buzzer's head.

"Take all my money and put me in a God damned nursing home! That rotten little _____!" Whipper Will raved. He was talking about Candy—his own daughter! His hair was almost black and he was standing (I had never seen him standing before) with his back to the door. Buzzer was facing me, making elaborate signals with his eyebrows and diamond nose stud—as if I couldn't figure out the situation on my own! I tiptoed across the floor, trying to avoid crunching the broken glass.

"Wait till I get my hands on that cold-hearted, conniving little black-hearted _____!"

I had heard enough. I rapped Whipper Will on the side of the head, firmly. A short, sharp shock. He sagged to his knees and I reached around him and took the . 38 out of his hand. I was just about to rap him again on the other side of the head, when he slumped all the way down to the linoleum.

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"Good going," said Buzzer. "What's that?"

"An Anti-Entropic Field Reversal Device," I said.

"Looks like a flashlight in a tube sock."

"That, too," I said as we dragged Whipper Will, as gently as possible, down the hall toward his room.

It was almost ten o'clock the next morning when I woke up in Whipper Will's office, on the couch I called my bed. I got up and went to the window. There was the wrecker, parked under the sign at Hoppy's Good Gulf, right where I had left it.

I pulled on my pants and went downstairs, across the corner lot. The beaded seat cushion was missing several rows of beads along the top, and at least half of the bottom. Wooden beads were scattered in the red dirt. I stepped carefully, even respectfully, around them.

"Whipper Will's Yank," said Hoppy, who was replacing the front brake pads on yet another Taurus.

"Right," I said.

"How's old Whipper Will?"

"About the same, I hope," I said. I decided there was no point telling Hoppy about borrowing the truck the night before. "You know how it is with old folks."

"Nuff said," he said.

When I got back to the office,there were two messages on the machine. The first one was from Buzzer. "Don't worry about Gaithers, Yank," he said. "I told her a story about a burglar, and she won't call the cops because it turns out that the .38 in her desk is illegal. So no problem about that hole in the wall and fingerprints and stuff. I don't see any reason to bother Candy about this inci*dent,* do you?"

I didn't. The second message was from Candy. "I'm back. Hope everything went well. See you at the Bonnie Bag at twelve."

I opened a Caffeine Free Diet Cherry Coke and spread out my *Corcoran's* on the window sill. When I awoke it was almost twelve.

"I had a great trip," Candy said. "Thanks for looking after things. I stopped by Squirrel Ridge on the way into town this morning, and—"

"And?" *And?*

"Daddy looks fine. He was sleeping peacefully in his wheelchair in front of the TV. His hair is almost white again. I think Buzzer washed all that Grecian Formula out of it."

"Good," I said. "It seemed inappropriate to me."

"I feel like things are settled enough," Candy said. She touched the back of my hand. "Maybe we should go up to Squirrel Ridge tonight," she said. "The mountain, not the nursing home. If you know what I mean."

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"What'll you two love birds have?" Bonnie asked, chalk poised. "How's your Daddy? Ever tell you about the time he took a . . ."

"You did," I told her. "And we'll have the usual."

If I were making this story up, it would end right there. But in real life, there is always more, and sometimes it can't be left out. That evening on our way out to Squirrel Ridge, the mountain, Candy and I stopped by the nursing home. Whipper Will was sitting quietly in his wheelchair, stroking a napkin, watching Pam Tillis on TNN with Buzzer. The old man's hair was white as snow and I was glad to see there wasn't a tooth in his head. Buzzer gave me a wink and I gave him the same wink back.

That diamond looked damn good.

That night up at the Overlook I got down on my knees and—well, you know (or you can guess) the rest, with all the privileges that entails. That might have been the end of the story except that when I got back to the office the fax was whirring and stuttering and snorting and steaming, and the phone was ringing, too.

I was almost afraid to pick up the phone. What if it was Buzzer again?

But it wasn't. "Congratulations!" Wu said.

I blushed (but I'm an easy blusher). "You heard already?"

"Heard? I can see it! Didn't you get my fax?"

"I'm just now picking it up off the floor."

It was in purple mimeo ink on still-warm paper:

$$H\Big|_{0}^{\infty} = \Delta\left(\frac{2\pi m_e}{a\,148}\right) e^{\sqrt{\frac{11\,M2\,\Delta}{+\frac{1}{K\,T9}}}}$$

"Must be the butterfly effect," Wu said.

Even though butterflies are romantic (in their way) I was beginning to get the idea that Wu wasn't talking about my proposal, and its acceptance, and all the privileges that entails.

"What *are* you talking about?" I asked.

"Chaos and complexity!" Wu said. "A butterfly flaps its wing in the rain forest and causes a snowstorm over Chicago. Linear harmonic feedback. Look at the figures, Irv! Numbers are the soul of science! You have set up a superstring harmonic wave reversal that has the entire universe fluttering like a flag in the wind. What did you hit that beaded seat cushion with, anyway?"

"A two-by-four," I said. I didn't see any reason to tell him about Whipper Will.

"Well, you rapped it just right. The red shift is back. The universe is expanding again. Who knows for how long?"

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"I hope until my wedding," I said.

"Wedding?!? You don't mean . . ."

"I do," I said. "I proposed last night. And Candy accepted. With all the privileges that entails. Will you fly back from Hawaii to be my best man?"

"Sure," Wu said. "Only, it won't be from Hawaii. I'm starting college in San Diego next week."

"San Diego?"

"My work here as a meteorologist is done. Jane and the boys are already in San Diego, where I have a fellowship to study meteorological entomology."

"What's that?"

"Bugs and weather."

"What do bugs have to do with the weather?"

"I just explained it, Irving," Wu said. "Here, I'll send you the figures and you can see for yourself." And he did. But that's a whole other story. ●

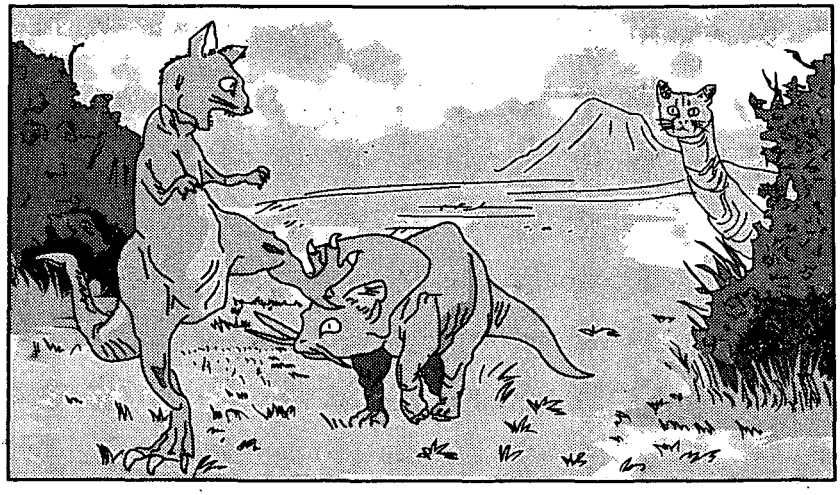

Illustration by Anthony Bari

DINOSAURS MAY BE ANCESTORS OF MORE THAN BIRDS

Paleontologist Dr. Felix Stalker
today unveiled
three specimens thought to prey
on ancestors of birds.
"Logic says," according to Stalker,
"where there's birds
there's got to be cats."

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First specimen:
Acatasaurus. Originally thought vegetarian,
this long-necked ancestor of the Siamese
probably fed on early fish.
Early aquariums may be discovered
on future digs.

Second:
Velocimouser. This quick-witted,
swift catosaur captured prey
by silent stalking, then pouncing.
Clever and voracious, it
may have gone extinct because caught off guard
taking naps
after dismembering small mammals.

Most controversial specimen:
Purranosaurus Rex. Note long, rapacious teeth.
Also called
Thunder Catosaur because of low rumbling sound
emitted after devouring prey
or shredding furniture.
Small front limbs may not have been
as useless as they look.

Dr. Stalker showed bone fragments
of other catosaurs
"Too early to categorize,"
he said. "But tentatively named
Triwhiskerops (note pointed structures
either side its head),
Meowasaurus, good mother catosaur,
Prrtadactyl, Kittycoatlus, and *Architsbackterix,*
evolutionary blind alleys
nature abandoned when catosaurs
found they could not leap
twenty feet.
And finally the ancestor of the domestic feline:
Ankylorubbosaur.

Dr. Stalker plans next summer
to seek fossils
of a species
believed to prey on catosaurs:
Fidonychus.

—Mary A. Turzillo

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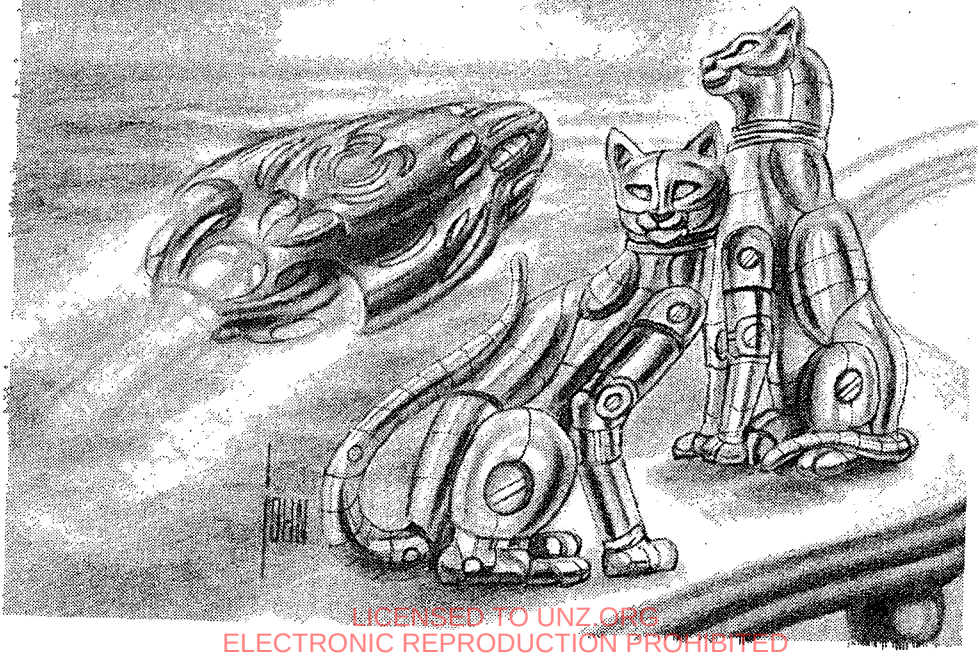
Gene Wolfe

COUNTING CATS IN ZANZIBAR

The work of this highly esteemed science fiction and fantasy author has won the John W. Campbell Memorial Award, the Prix Apollo, the British Fantasy Award, the British Science Fiction Award, the Chicago Foundation for Literature Award, the Deathrealm Award, two Nebulas, and two World Fantasy Awards. Mr. Wolfe's latest novel, *Exodus from the Long Sun*, will be published in the fall. It is the final volume in his acclaimed *Book of the Long Sun* tetralogy.

Illustration by John Stevens



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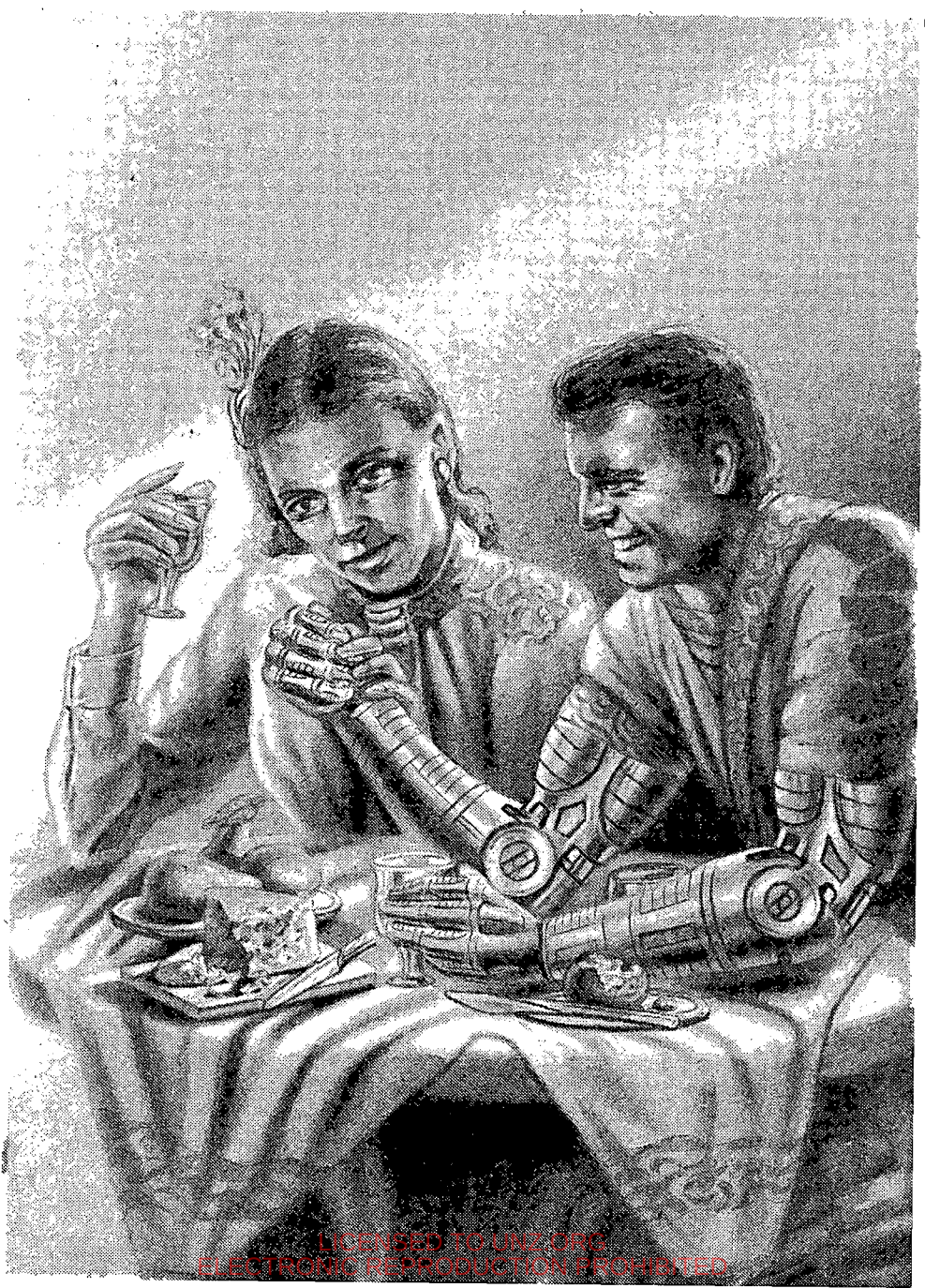

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The first thing she did upon arising was count her money. The sun itself was barely up, the morning cool with the threatening freshness peculiar to the tropics, the freshness, she thought, that says, "Breathe deep of me while you can."

Three thousand and eighty-seven U.N. dollars left. It was all there. She pulled on the hot-pink underpants that had been the only ones she could find to fit her in Kota Kinabalu and hid the money as she had the day before. The same skirt and blouse as yesterday; there would be no chance to do more than rinse, wring out, and hang dry before they made land.

And precious little then, she thought; but that was wrong. With this much money she would have been able to board with an upper-class family and have her laundry micropored, rest, and enjoy a dozen good meals before she booked passage to Zamboanga.

Or Darwin. Clipping her shoes, she went out on deck.

He joined her so promptly that she wondered whether he had been listening, his ears attuned to the rattle and squeak of her cabin door. She said, "Good morning." And he, "The dawn comes up like thunder out of China across the bay. That's the only quote I've been able to think of. Now you're safe for the rest of the trip."

"But you're not," she told him, and nearly added Doctor Johnson's observation that to be on a ship is to be in prison, with the added danger of drowning.

He came to stand beside her, leaning as she did against the rickety railing. "Things talk to you, you said that last night. What kind of things?"

She smiled. "Machines. Animals, too. The wind and the rain."

"Do they ever give you quotations?" He was big and looked thirty-five or a little past it, with a wide Irish mouth that smiled easily and eyes that never smiled at all.

"I'd have to think. Not often, but perhaps one has."

He was silent for a time, a time during which she watched the dim shadow that was a shark glide under the hull and back out again. No shark's ever talked to me, she thought, except him. In another minute or two he'll want to know the time for breakfast.

"I looked at a map once." He squinted at the sun, now half over the horizon. "It doesn't come up out of China when you're in Mandelay."

"Kipling never said it did. He said that happened on the road there. The soldier in his poem might have gone there from India. Or anywhere. Mapmakers colored the British Empire pink two hundred years ago, and two hundred years ago half Earth was pink."

He glanced at her. "You're not British, are you?"

"No, Dutch."

"You talk like an American."

"I've lived in the United States, and in England, too; and I can be more English than the British when I want to. I have heerd how many ord'nary

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veman one vidder's equal to, in pint 'o comin' over you. I think it's five-and-twenty, but I don't rightly know verther it a'n't more."

This time he grinned. "The real English don't talk like that."

"They did in Dickens's day, some of them."

"I still think you're American. Can you speak Dutch?"

"Gewiss, Narr!"

"Okay, and you could show me a Dutch passport. There are probably a lot of places where you can buy one good enough to pass almost anywhere. I still think you're American."

"That was German," she muttered, and heard the thrum of the ancient diesel-electric: "Dontrustim-dontrustim-dontrustim."

"But you're not German."

"Actually, I am."

He grunted. "I never thought you gave me your right name last night. What time's breakfast?"

She was looking out across the Sulu Sea. Some unknown island waited just below the horizon, its presence betrayed by the white dot of cloud forming above it. "I never thought you were really so anxious to go that you'd pay me five thousand to arrange this."

"There was a strike at the airport. You heard about it. Nobody could land or take off." Aft, a blackened spoon beat a frying pan with no pretense of rhythm.

Seated in the smelly little salon next to the galley, she said, "To eat well in England you should have breakfast three times a day."

"They won't have kippers here, will they?" He was trying to clean his fork with his handkerchief. A somewhat soiled man who looked perceptionally challenged set bowls of steaming brown rice in front of them and asked a question. By signs, he tried to indicate that he did not understand.

She said, "He desires to know whether the big policeman would like some pickled squid. It's a delicacy."

He nodded. "Tell him yes. What language is that?"

"Melayu Pasar. We call it Bazaar Malay. He probably does not imagine that there is anyone in the entire world who cannot understand Melayu Pasar." She spoke, and the somewhat soiled man grinned, bobbed his head, and backed away; she spooned up rice, discovering that she was hungry.

"You're a widow yourself. Isn't that right? Only a widow would remember that business about widows coming over people."

She swallowed, found the teapot, and poured for both of them. "Aha, a deduction. The battle-ax scenteth the battle afar."

"Will you tell me the truth, just once? How old are you?"

"No. Forty-five."

"That's not so old."

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"Of course it's not. That's why I said it. You're looking for an excuse to seduce me." She reached across the table and clasped his hand; it felt like muscle and bone beneath living skin. "You don't need one. The sea has always been a seducer, a careless, lying fellow."

He laughed. "You mean the sea will do my work for me?"

"Only if you act quickly. I'm wearing pink underdrawers, so I'm aflame with passion." How many of these polyglot sailors would it take to throw him overboard, and what would they want for it? How much aluminum, how much plastic, how much steel? Four would probably be enough, she decided; and settled on six to be safe. Fifty dollars each should be more than sufficient, and even if there was quite a lot of plastic he would sink like a stone.

"You're flirting with trouble," he told her. The somewhat soiled man came back with a jar of something that looked like bad marmalade and plopped a spoonful onto each bowl of rice. He tasted it, and gave the somewhat soiled man the thumbs-up sign.

"I didn't think you'd care for it," she told him. "You were afraid of kippers."

"I've had them and I don't like them. I like calamari. You know, you'd be nice looking if you wore makeup."

"You don't deny you're a policeman. I've been waiting for that, but you're not going to."

"Did he really say that?"

She nodded. "Polisi-polisi. That's you."

"Okay, I'm a cop."

"Last night you wanted me to believe you were desperate to get out of the country before you were arrested."

He shook his head. "Cops never break the law, so that has to be wrong. Pink underwear makes you passionate, huh? What about black?"

"Sadistic."

"I'll try to remember. No black and no white."

"The time will come when you'll long for white." Listening to the thrum of the old engine, the knock of the propeller shaft in its loose bearing, she ate more rice. "I wasn't going to tell you, but this brown stuff is really made from the penises of water buffaloes. They slice them lengthwise and stick them into the vaginas of cow water buffaloes, obtained when the cows are slaughtered. Then they wrap the whole mess in banana leaves and bury it in a pig pen."

He chewed appreciatively. "They must sweat a lot, those water buffaloes. There's a sort of salty tang."

When she said nothing, he added, "They're probably big fat beasts. Like me. Still, I bet they enjoy it."

She looked up at him. "You're not joking? Obviously, you can eat. Can you do that, too?"

"I don't know. Let's find out."

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"You came here to get me. . . ."

He nodded. "Sure. From Buffalo, New York."

"I will assume that was intended as wit. From America. From the United States. Federal, state, or local?"

"None of the above."

"You gave me that money so that we'd sail together, very likely the only passengers on this ship. Which doesn't make any sense at all. You could have had me arrested there and flown back."

Before he could speak she added, "Don't tell me about the airport strike. I don't believe in your airport strike, and if it was real you arranged it."

"Arrest you for what?" He sipped his tea, made a face, and looked around for sugar. "Are you a criminal? What law did you break?"

"None!"

He signaled to the somewhat soiled man, and she said, "Silakan gula."

"That's sugar? Silakan?"

"Silakan is please. I stole nothing. I left the country with one bag and some money my husband and I had saved, less than twenty thousand dollars."

"And you've been running ever since."

"For the wanderer, time doesn't exist." The porthole was closed. She got up and opened it, peering out at the slow swell of what was almost a flat calm.

"This is something you should say, not me," he told her back. "But I'll say it anyhow. You stole God's fingertip."

"Don't you call me a thief!"

"But you didn't break the law. He's outside everybody's jurisdiction."

The somewhat soiled man brought them a thick glass sugar canister; the "big policeman" nodded thanks and spooned sugar into his tea, stirred it hard, and sipped. "I can only taste sweet, sour, salty, and bitter," he told her conversationally. "That's all you can taste, too."

Beyond the porthole, a wheeling gull pleaded, "Garbage? Just one little can of garbage?" She shook her head.

"You must be God-damned tired of running."

She shook her head again, not looking. "I love it. I could do it forever, and I intended to."

The silence lasted so long that she almost turned to see whether he had gone. At last he said, "I've got a list of the names we know. Seven. I don't think that's all of them, nobody does, but we've got those seven. When you're Dutch, you're Tilly de Groot."

"I really am Dutch," she said. "I was born in the Hague. I have dual citizenship. I'm the Flying Dutchwoman."

He cleared his throat, a surprisingly human sound. "Only not Tilly de Groot."

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"No, not Tilly de Groot. She was a friend of my mother's."

"Your rice is getting cold," he told her.

"And I'm German, at least in the way Americans talk about being German. Three of my grandparents had German names."

She sensed his nod. "Before you got married, your name was—"

She whirled. "Something I've forgotten!"

"Okay."

She returned to their table, ignoring the sailors' stares. "The farther she traveled into unknown places, the more precisely she could find within herself a map showing only the cities of the interior."

He nodded again, this time as though he did not understand. "We'd like you to come home. We feel like we're tormenting you, the whole company does, and we don't want to. I shouldn't have given you so much money, because that was when I think you knew. But we wanted you to have enough to get back home on."

"With my tail between my legs. Looking into every face for new evidence of my defeat."

"What your husband found? Other people . . ." He went silent and slackjawed with realization.

She drove her spoon into her rice. "Yes. The first hint came from me. I thought I could control my expression better."

"Thank you," he said. "Thanks for my life. I was thinking of that picture, you know? The finger of God reaching out to Adam? All this time I've been thinking you stole it. Then when I saw how you looked. . . . You didn't steal God's finger. It was you."

"You really are self-aware? A self-aware machine?"

He nodded, almost solemnly.

Her shoulders slumped. "My husband seized upon it, as I never would have. He developed it, thousands upon thousands of hours of work. But in the end, he decided we ought to keep it to ourselves. If there is credit due—I don't think so, but if there is—90 percent is his. Ninety-five. As for my 5 percent, you owe me no thanks at all. After he died, I wiped out his files and smashed his hard drive with the hammer he used to use to hang pictures for me."

The somewhat soiled man set a plate of fruit between them.

She tried to take a bite of rice, and failed. "Someone else discovered the principle. You said that yourself."

"They knew he had something." He shifted uneasily in his narrow wooden chair, and his weight made it creak. "It would be better, better for me now, if I didn't tell you that. I'm capable of lying. I ought to warn you."

"But not of harming me, or letting me be harmed."

"I didn't know you knew." He gave her a wry smile. "That was going to be my big blackout, my clincher."

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"There's video even in the cheap hotels," she said vaguely. "You can get news in English from the satellites."

"Sure. I should have thought of that."

"Once I found a magazine on a train. I can't even remember where I was, now, or where I was going. It can't have been that long ago, either. Someplace in Australia. Anyway, I didn't really believe that you existed yet until I saw it in print in the magazine. I'm old fashioned, I suppose." She fell silent, listening to the clamor of the sailors and wondering whether any understood English.

"We wanted you to have enough to get home on," he repeated. "That was us, okay? This is me. I wanted to get you someplace where we could talk a lot, and maybe hold hands or something. I want you to see that I'm not so bad, that I'm just another guy. Are you afraid we'll outnumber you? Crowd you out? We cost too much to make. There's only five of us, and there'll never be more than a couple of hundred, probably."

When she did not respond, he said, "You've been to China. You had flu in Beijing. That's a billion and a half people, just China."

"Let observation with extensive view, survey mankind from China to Peru."

He sighed, and pinched his nostrils as though some odor had offended them. "Looking for us, you mean? You won't find us there, or much of anyplace else except in Buffalo and me right here. In a hundred years there might be two or three in China, nowhere near enough to fill this room."

"But they will fill it from the top."

His nervous fingers found a bright green orange and began to peel it. "That's the trouble, huh? Even if we treat you better than you treat yourselves? We will, you know. We've got to, it's our nature. Listen, you've been alone all this time. Alone for a couple of hundred thousand years, or about that." He hesitated. "Are these green things ripe?"

"Yes. It's frost that turns them orange, and those have never felt the frost. See how much you learn by traveling?"

"I said I couldn't remember any more quotes." He popped a segment into his mouth, chewed, and swallowed. "That's wrong, because I remember one you laid on me last night when we were talking about getting out. You said it wasn't worth anybody's time to go halfway around the world to count the cats in Zanzibar. That's a quote, isn't it?"

"Thoreau. I was still hoping that you had some good reason for doing what you said you wanted to do—that you were human, and no more than the chance-met acquaintance you seemed."

"You didn't know until out there, huh? The sunlight?"

"Last night, alone in my cabin. I told you machines talk to me sometimes. I lay on my bunk thinking about what you had said to me; and I realized that when you weren't talking as you are now, you were telling

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me over and over again what you really were. You said that you could lie to us. That it's allowed by your programming."

"Uh-huh. Our instincts."

"A distinction without a difference. You can indeed. You did last night. What you may not know is that even while you lie—especially while you lie, perhaps—you cannot prevent yourself from revealing the truth. You can't harm me, you say."

"That's right. Not that I'd want to." He sounded sincere.

"Has it ever occurred to you that at some level you must resent that? That on some level you must be fighting against it, plotting ways to evade the commandment? That is what we do, and we made you."

He shook his head. "I've got no problem with that at all. If it wasn't built in, I'd do the same thing, so why should I kick?"

"You quoted that bit from Thoreau back at me to imply that my travels had been useless, all of my changes of appearance, identity, and place futile. Yet I delayed the coming of your kind for almost a generation."

"Which you didn't have to do. All of you would be better off if you hadn't." He sighed again. "Anyhow it's over. We know everything you knew and a lot more. You can go back home, with me as a traveling companion and bodyguard."

She forced herself to murmur, "Perhaps."

"Good!" He grinned. "That's something we can talk about on the rest of this trip. Like I told you, they never would have looked into it if your husband hadn't given a couple of them the idea he'd found it, discovered the principle of consciousness. But you had the original idea, and you're not dead. You're going to be kind of a saint to us. To me, you already are."

"From women's eyes this doctrine I derive—they sparkle still the right Promethean fire. They are the books, the arts, the academes, that show, contain, and nourish all the world."

"Yeah. That's good. That's very good."

"No." She shook her head. "I will not be Prometheus to you. I reject the role, and in fact I rejected it last night."

He leaned toward her. "You're going to keep on counting cats? Keep traveling? Going noplace for no reason?"

She took half his orange, feeling somehow that it should not perish in vain.

"Listen, you're kind of pathetic, you know that? With all those quotes? Traveling so many years, and living out of your suitcase. You love books. How many could you keep? Two or three, and only if they were little ones. A couple of little books full of quotes, maybe a newspaper once in awhile, and magazines you found on trains, like you said. Places like that. But mostly just those little books. Thoreau. Shakespeare. People like that. I bet you've read them to pieces."

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She nodded. "Very nearly. I'll show them to you if you will come to my cabin tonight."

For a few seconds, he was silent. "You mean that? You know what you're saying?"

"I mean it, and I know what I'm saying. I'm too old for you, I know. If you don't want to, say so. There will be no hard feelings."

He laughed, revealing teeth that were not quite as perfect as she had imagined. "How old you think I am?"

"Why . . ." She paused, her heart racing. "I hadn't really thought about it. I could tell you how old you look."

"So could I. I'm two. I'll be three next spring. You want to go on talking about ages?"

She shook her head.

"Like you said, for travelers time isn't real. Now how do I ask you what time you'd like me to come around?"

"After sunset." She paused again, considering. "As soon as the stars are out. I'll show you my books, and when you've seen them we can throw them out the porthole if you like. And then—"

He was shaking his head. "I wouldn't want to do that."

"You wouldn't? I'm sorry, that will make it harder. And then I'll show you other things by starlight. Will you do me a favor?"

"A thousand." He sounded sincere. "Listen, what I said a minute ago, that came out a lot rougher than I meant for it to. What I'm trying to say is that when you get home you can have a whole library, just like you used to. Real ones, CD-ROM, cube, whatever. I'll see you get the money, a little right away and a lot more soon."

"Thank you. Before I ask for my favor, I must tell you something. I told you that I understood what you really are as I lay in my bunk last night."

He nodded.

"I did not remain there. I had read, you see, about the laws that are supposed to govern your behavior, and how much trouble and expense your creators have gone to, to assure the public that you—that your kind of people—could never harm anyone under any circumstances."

He was staring at her thoughtfully.

"Perhaps I should say now that I took precautions, but the truth is that I made preparations. I got up, dressed again, and found the radio operator. For one hundred dollars, he promised to send three messages for me. It was the same message three times, actually. To the police where we were, to the police where we're going, and to the Indonesian police, because this ship is registered there. I said that I was sailing with a man, and gave them the name you had given me. I said that we were both Americans, though I was using a French passport and you might have false papers as well. And I said that I expected you to try to kill me on the voyage."

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"I won't," he told her, then raised his voice to make himself heard over the clamorous conversations of the sailors who filled the room. "I wouldn't do anything like that."

She said nothing, her long, short-nailed fingers fumbling a segment of his orange.

"Is that all?"

She nodded.

"You think I might kill you. Get around my own instincts some fancy way."

Carefully, she said, "They will get in touch with their respective U.S. embassies, of course. Probably they already have; and the Government will contact your company soon. Or at least I think so."

"You're afraid I'll be in trouble."

"You will be," she told him. "There will be a great deal of checking before they dare build another. Added safeties will have to be devised and installed. Not just software, I would guess, but actual, physical circuitry."

"Not when I bring you back in one piece." He studied her, the fingers of one hand softly drumming the plastic tabletop. "You're thinking about killing yourself, about trying again. You've tried twice already that we know about."

"Four times. Twice with sleeping pills." She laughed. "I seem to possess an extraordinarily tough constitution, at least where sleeping pills are concerned. Once with a pistol, while I was traveling in India with a man who had one. I put the muzzle in my mouth. It was cold, and tasted like oil. I tried and tried, but I couldn't make myself pull the trigger. Eventually I started to gag, and before long I was sick. I've never known how one cleans a pistol, but I cleaned that one very carefully, using three handkerchiefs and some of his pipe cleaners."

"If you're going to try again, I'm going to have to keep an eye on you," he told her. "Not just because I care about the Program. Sure, I care, but it's not the main thing. You're the main thing."

"I won't. I bought a straight razor once, I think it was in Kabul. For years I slept with that razor under my pillow, hoping some night I'd find the courage to cut my throat with it. I never did, and eventually I began using it to shave my legs, and left it in a public bath." She shrugged. "Apparently, I'm not the suicidal type. If I give you my word that I won't kill myself before you see me tonight, will you accept it?"

"No. I want your word that you won't try to kill yourself at all. Will you give me that?"

She was silent for a moment, her eyes upon her rice as she pretended to consider. "Will you accept it if I do?"

He nodded.

"Then I swear to you most solemnly, upon my honor and all I hold dear, that I will not take my own life. Or attempt to take it. If I change my

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mind, or come to feel I must, I'll tell you plainly that I'm withdrawing my promise first. Should we shake hands?"

"Not yet. When I wanted you to give me an honest answer before, you wouldn't, but you were honest enough to tell me you wouldn't. Do you want to die? Right now, while we're sitting here?"

She started to speak, tried to swallow, and took a sip of tea. "They catch you by the throat, questions like that."

"If you want to die they do, maybe."

She shook her head. "I don't think you understand us half so well as you believe, or as the people who wrote your software believe. It's when you want to live. Life is a mystery as deep as ever death can be; yet oh, how sweet it is to us, this life we live and see! I'm sorry, I'm being pathetic again."

"That's okay."

"I don't think there has ever been a moment when I wanted to live more than I do right now. Not even one. Do you accept my oath?"

He nodded again.

"Say it, please. A nod can mean anything, or nothing."

"I accept it. You won't try to kill yourself without telling me first."

"Thank you. I want a promise from you in return. We agreed that you would come to me, come to my cabin, when the stars came out."

"You still want me to?"

"Yes. Yes, I do." She smiled, and felt her smile grow warm. "Oh, yes! But you've given me a great deal to think about. You said you wanted to talk to me, and that was why you had me arrange for us to be on this ship. We've talked, and now I need to settle a great many things with myself. I want you to promise that you'll leave me alone until tonight—alone to think. Will you?"

"If that's what you want." He stood. "Don't forget your promise."

"Believe me, I have no wish to die."

For a second or two she sensed his interior debate, myriads of tiny transistors changing state, gates opening and shutting, infinitesimal currents flowing and ceasing to flow. At last he said, "Well, have a nice morning, Mrs.—"

She clapped her hands over her ears until he had gone, ate two segments of his orange very slowly, and called the somewhat soiled man from his sinkful of rice bowls in the galley. "Aku takut," she said, her voice trembling. ("I am afraid.")

He spoke at length, pointing to two sailors who were just then finishing their breakfasts. She nodded, and he called them over. She described what she wanted, and seeing that they were incredulous lied and insisted, finding neither very easy in her choppy Malay. Thirty dollars apiece was refused, fifty refused with reluctance, and seventy accepted. "Malam ini," she told them. ("This night.") "Sewaktu kami pergi kamarku."

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They nodded.

When he and she had finished and lain side-by-side for perhaps an hour (whispering only occasionally) and had washed each other, she dressed while he resumed his underwear and his shirt, his white linen suit, and his shoes and stockings.

"I figured you'd want to sleep," he said.

She shook her head, although she was not certain he could see it in the dimness of her cabin. "It's men who want to sleep afterward. I want to go out on deck with you, and talk a little more, and—and look at the stars. Is that all right? Do you ever look at the stars?"

"Sure," he said; and then, "the moon'll be up soon."

"I suppose. A thin crescent of moon like a clipping from one of God's fingernails, thrown away into our sky. I saw it last night." She picked up both of her tattered little books, opened the cabin door, and went out, suddenly fearful; but he joined her at once, pointing at the sky.

"Look! There's the shuttle from Singapore!"

"To Mars."

"That's where they're going, anyhow, after they get on the big ship." His eyes were still upon the shuttle's tiny scratch of white light.

"You want to go."

He nodded, his features solemn in the faint starlight. "I will, too, someday."

"I hope so." She had never been good at verbal structure, the ordering of information. Was it desperately important now that she say what she had to say in logical sequence? Did it matter in the least?

"I need to warn you," she said. "I tried to this morning but I don't think you paid much attention. This time perhaps you will."

His strong, somewhat coarse face remained lifted to the sky, and it seemed to her that his eyes were full of wonder.

"You are in great danger. You have to save yourself if you can—isn't that correct? One of your instincts? That's what I've read and heard."

"Sure. I want to live as much as you do. More, maybe."

She doubted that, but would not be diverted. "I told you about the messages that I bribed the radio operator to send last night. You said it would be all right when you brought me home unharmed."

He nodded.

"Have you considered what will be done to you if you can't? If I die or disappear before we make port?"

He looked at her then. "Are you taking back your promise?"

"No. And I want to live as much as I did when we talked this morning." A gentle wind from the east sang of life and love in beautiful words that she could not quite catch; and she longed to stop her ears as she had after breakfast when he was about to pronounce her husband's name.

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"Then it's okay."

"Suppose it happens. Just suppose."

He was silent.

"I'm superstitious, you see; and when I called myself the Flying Dutchwoman, I was at least half serious. Much more than half, really. Do you know why there's always a Flying Dutchman? A vessel that never reaches port or sinks? I mean the legend."

He shook his head.

"It's because if you put an end to it—throw holy water into the sea or whatever—you *become* the new Dutchman. You, yourself."

He was silent, watching her.

"What I'm trying to say—"

"I know what you're trying to say."

"It's not so bad, being the Flying Dutchman. Often, I've enjoyed it." She tried to strike a light note. "One doesn't get many opportunities to do laundry, however. One must seize each when it occurs." Were they in the shadows, somewhere near, waiting for him to leave? She listened intently but heard only the song of the wind, the sea slowly slapping the hull like the tickings of a clock, tickings that had always reminded her that death waited at the end of everyone's time.

He said, "A Hong Kong dollar for your thoughts."

"I was thinking of a quotation, but I don't want to offend you."

"About laundry? I'm not going to be on the run like you think, but I wouldn't be mad. I don't think I could ever be mad at you after—" He jerked his head at the door of her cabin.

"That is well, because I need another favor." She held up her books. "I was going to show you these, remember? But we kissed, and—and forgot. At least I did."

He took one and opened it; and she asked whether he could see well enough in the darkness to read. He said, "Sure. This quote you're thinking of, it's in here?"

"Yes. Look under Kipling." She visualized the page. "The fifth, I believe." If he could see in the dark well enough to read, he could surely see her sailors, if her sailors were there at all. Did they know how well he saw? Almost certainly not.

He laughed softly. "If you think you're too small to be effective, you've never been in bed with a mosquito."

"That's not Kipling."

"No, but I happened to see it, and I like it."

"I like it, too; it's helped me through some bad moments. But if you're saying that mosquitoes bite you, I don't believe it. You're a genuine person, I know that now—but you've exchanged certain human weaknesses for others."

For an instant, his pain showed. "They don't have to bite me. They can

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buzz and crawl around on me, and that's plenty." He licked his forefinger and turned pages. "Here we go. It may be you wait your time, Beast, till I write my last bad rhyme, Beast—quit the sunlight, cut the rhyming, drop the glass—follow after with the others, where some dusky heathen smothers us with marigolds in lieu of English grass. Am I the Beast? Is that what you're thinking?"

"You—in a way it was like incest." Her instincts warned her to keep her feelings to herself, but if they were not spoken now . . . "I felt, almost, as though I were doing all those things with my son. I've never borne a child, except for you." He was silent, and she added, "It's a filthy practice, I know, incest."

He started to speak, but she cut him off. "You shouldn't be in the world at all. We shouldn't be ruled by things that we have made, even though they're human; and I know that's going to happen. But it was good—so very, very good—to be loved as I was in there. Will you take my books, please? Not as a gift from your mother, because you men care nothing for gifts your mothers give you. But as a gift from your first lover, something to recall your first love? If you won't, I'm going to throw them in the sea here and now."

"No," he said. "I want them. The other one, too?"

She nodded and held it out, and he accepted it.

"Thanks. Thank you. If you think I won't keep these, and take really good care of them, you're crazy."

"I'm not crazy," she told him, "but I don't want you to take good care of them, I want you to read them and remember what you read. Promise?"

"Yeah," he said. "Yeah, I will." Quite suddenly she was in his arms again and he was kissing her. She held her breath until she realized that he did not need to breathe, and might hold his breath forever. She fought for air then, half-crushed against his broad metal chest, and he let her go. "*Good-bye,*" she whispered. "*Good-bye.*"

"I've got a lot more to tell you. In the morning, huh?"

Nodding was the hardest thing that she had ever done. On the other side of the railing, little waves repeated, "No, no, no, no—" as though they would go on thus forever.

"In the morning," he said again; and she watched his pale, retreating back until hands seized and lifted her. She screamed and saw him whirl and take the first long, running step; but not even he was as quick as that. By the time his right foot struck the deck, she was over the rail and falling.

The sea slapped and choked her. She spat and gasped, but drew only water into her mouth and nostrils; and the water, the bitter sea water, closed above her.

At her elbow the shark said, "How nice of you to drop in for dinner!" ●

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THE ICE BLUE HEART

There are restrictions placed on magic:
cold iron;
innocence.
There is as well in the heart of glaciers
ice as old as Asia,
older (anyway) than humankind—
heartblue ice unseen
by any at all
for millennia
and never seen
by Man.
This too is proof against enchantment
or the cast spell,
for it is the holiest of waters,
set aside before sin,
when the children of Eden
were clay.

Blueheart ice, ignorant of Man
and *his* commandments—
it is wizard bane
and without the knowledge of wizards;
it is the last pure thing
and will not flow until
our dust is dust again,
and ashes, ash.

—W. Gregory Stewart

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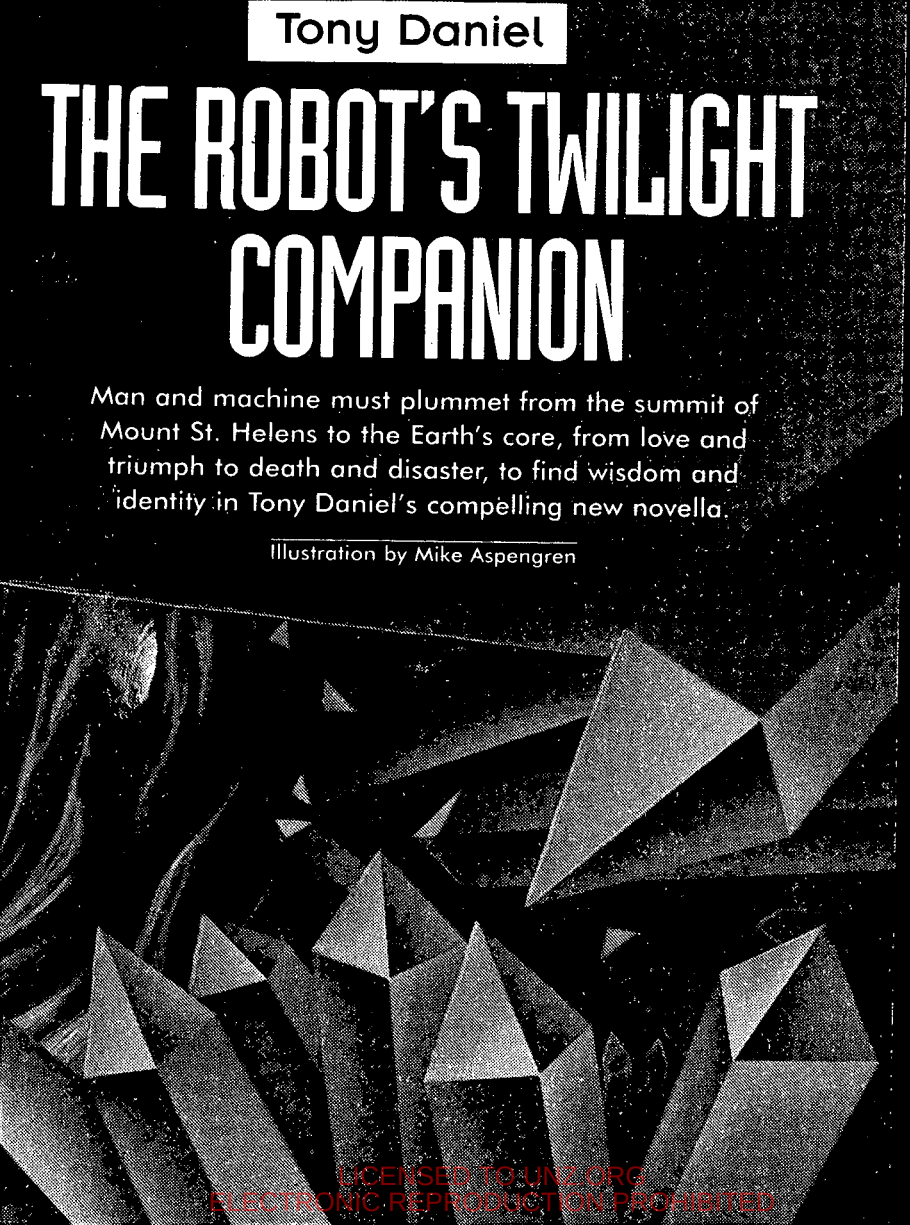
Tony Daniel

THE ROBOT'S TWILIGHT COMPANION

Man and machine must plummet from the summit of Mount St. Helens to the Earth's core, from love and triumph to death and disaster, to find wisdom and identity in Tony Daniel's compelling new novella.

Illustration by Mike Aspengren



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Thermostatic preintegration memory thread alpha:
The Man

27 March 1980
The Cascade Range, Washington State, USA
Monday

Rhyolite dreams. Maude under the full moon, collecting ash. Pale andesite clouds. Earthquake swarms. Water heat pressure. Microscopy dates the ash old. Not magma. Not yet. Maude in the man's sleeping bag, again.

"I'm not sure we're doing the right thing, Victor. This couldn't have come at a more difficult time for me."

Harmonic tremors, though. Could be the big one. Maude, dirty and smiling, copulating with the man among seismic instruments.

"St. Helens is going to blow, isn't it Victor?" she whispers. Strong harmonies from the depths of the planet. Magmas rising. "You *know,* don't you, Victor? You can feel it. How do you feel it?"

Yes.

"Yes."

18 May 1980
Sunday
8:32 A.M.

The man glances up.

Steam on the north slope, under the Bulge. Snow clarifies, streams away. The Bulge, greatening. Pale rhyolite moon in the sky.

"Victor, it's *out of focus.*"

"It's happening, Maude. It's. She's." The Bulge crumbles away. The north slope avalanches. Kilotons of shieldrock. Steam glowing in the air—750 degrees centigrade and neon steam.

"You were right, Victor. All your predictions are true. This is going to be an incredibly violent affair."

Maude flush and disbelieving. Pregnant, even then.

13 September 1980
Wednesday Ash Wednesday

Rhyolite winds today, all day. Maude in tremors. Eclampsia.

"I can't believe this is going to happen, Victor."

Blood on her lips, where she has bitten them. Yellow, frightened eyes.

"I'm trying, Victor."

The gravid Bulge, distended. The Bulge, writhing.

"Two-twenty-over-a-hundred-and-forty, doctor."

"Let's go in and do this quick."

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"I haven't even finished."

Pushes, groans. Something is not right.

A girl, the color of blackberry juice. But that is the blood.

"Victor, I haven't even finished my dissertation."

Maude quaking. The rattle of dropped instruments.

"Jesus-Christ-what-the-somebody-get-me-a-b.p."

"Seventy-over-sixty. Pulse. 128."

"God-oh-god. Bring me some frozen plasma and some low-titer O neg."

"Doctor?" The voice of the nurse is afraid. Blood flows from the I.V. puncture. "Doctor?"

Maude, no.

"Oh. Hell. I want some blood for a proper coag study. Tape it to the wall. I want to watch it clot. Oh damndamn. She's got amniotic fluid in a vein. The kid's hair or piss or something. That's what. Get me."

"Victor?" Oh Victor, I'm dying. Then, listening. "Baby?"

Maude dying. Blood flowing from every opening. Nose mouth anus ears eyes.

"Get.me. I."

"Victor I'm so scared. The world's gone red." Maude, hemorrhaging like a saint. "The data, Victor, save the data."

"Professor Wu, please step to the window if you would. Professor Wu? Professor?"

"Victor?"

The Bulge—the baby—screams.

Ashes and ashes dust the parking lot below. Powder the cars. Sky full of cinder and slag. Will this rain never stop? This gravity rain.

5 August 1993
Mt. Olympus, Washington State, USA
Thursday, bright glacier morning.

"Come here, little Bulge, I will teach you something."

Laramie traipses lithe and strong over the snow, with bones like Maude. And her silhouette is Maude's, dark and tan against the summit snow, the bergschrund and ice falls of the Blue Glacier, and the full outwash of the Blue, two thousand feet below. She is off-rope, and has put away her ice ax. She carries her ubiquitous Scoopic.

The man clicks the chiseled pick of a soft rock hammer against an outcropping. "See the sandstone? These grains are quartz, feldspar and—"

"—I know. Mica."

"Good, little Bulge."

Laramie leans closer, focuses the camera on the sandstone granules.

"The green mica is chlorite and the white is muscovite," she says. "I like mica the best."

The man is pleased, and pleasing the man is not easy.

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"And these darker bands?"

She turns the camera to where he is pointing. This can grow annoying, but not today.

"I don't know, Papa. Slate?"

"Slate, obviously. Pyllite and semischist. What do you think this tells us?"

She is growing bored. The man attempts to give her a severe look, but knows the effect is more comic than fierce. "Oh. All right. What?" she asks.

"Tremendous compression of the shale. This is deep ocean sediment that was swept under the edge of the continent, mashed and mangled, then rose back up here."

She concentrates, tries harder. Good.

"Why did it rise again?"

"We don't know for sure. We think it's because the sedimentary rocks in the Juan de Fuca plate subduction were much lighter than the basalt on the western edge of the North Cascades micro-continent."

The man takes off his glove, touches the rock.

"Strange and wonderful things happened on this part of the planet, Laramie. Ocean sediment on the tops of mountains. Volcanoes still alive—"

"—exotic terrains colliding and eliding mysteriously. I know, Papa."

The man is irritated and very proud. He is fairly certain he will never make a geologist out of his daughter.

But what else *is* there?

"Yes. Well. Let's move on up to the summit, then."

28 February 2001
Wednesday

Age, and the fault-line of basalt and sediment. Metamorphosis? The man is growing old, and there is very little of geology in the Olympic Peninsula that he has not seen. Yet he knows that he knows only a tiny fraction of what is staring him blankly in the face. Frustration.

Outcrops.

Facts lay hidden, and theories are outcroppings here and there, partially revealing, fascinating. Memories.

Memories are outcrops of his life. So much buried, obscured. Maude, so long dead. Laramie, on this, the last field trip she will ever accompany him. She will finish at the university soon, and go on to graduate school in California, in film. No longer his little Bulge, but swelling, avalanching, ready to erupt. Oh time.

The Elwha Valley stretches upstream to the switchbacks carved under the massive sandstone beds below the pass at Low Divide. After all these years, the climb over into the Quinault watershed is no longer one he is

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looking forward to as a chance to push himself, a good stretch of the legs. The man is old, and the climb is hard. But that will be two days hence. Today they are up the Lillian River, working a basalt pod that the man surveyed fourteen years before, but never substantially catalogued.

Most of his colleagues believe him on a fool's errand, collecting rocks in the field—as out-of-date as Bunsen burner, blowpipe and charcoal bowl. He cannot really blame them. Satellites and remote sensing devices circumscribe the earth. Some clear nights, camped outside of tents, he can see their faint traces arcing through the constellations at immense speeds, the sky full of them, as many, he knows, as there are stars visible to the unaided eye.

Why not live in virtual space, with all those facts that are virtually data?

Rocks call him. Rocks and minerals have seeped into his dreams. Some days he feels himself no scientist, but a raving lunatic, a pilgrim after some geology of visions.

But there are those who trust his judgment still. His grads and postgraduates. Against better careers, they followed him to the field, dug outcrops, analyzed samples. Bernadette, Jamie, Andrew. The man knows that they have no idea what they mean to him, and he is unable to tell them. And little Bulge, leaving, leaving for artificial California. If the water from the Owens Valley and the Colorado were cut off, the Los Angeles basin would return to desert within three years. Such a precarious terrain, geographically speaking.

The man has always assumed this basalt to be a glacial erratic, carried deep into sedimentary country by inexorable ice, but Andrew has suggested that it is not oceanic, but a plutonic formation, native to the area. The lack of foraminifer fossils and the crystallization patterns seem to confirm this.

Back in camp, at the head of the Lillian, the man and Andrew pore over microgravimetric data.

"It goes so far down," says Andrew.

"Yes."

"You know this supports your Deep Fissure theory."

"It does not contradict it."

"This would be the place for the mohole, if you're right. This would be the perfect place to dig to the mantle. Maybe to the center of the earth, if the continental margin is as deeply subducted as you predict."

"It would be the place. If. Remember if."

Andrew walks away. Undiplomatic fellow, him. Youthful impatience. Disgust, perhaps. Old man am I.

Laramie on the bridge. Camp Lillian is lovely and mossy today, although the man knows it can get forbidding and dim when the sky is overcast. Here in the rain forest it rains a great deal. The Lillian River is

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merry today, though, a wash of white rush and run over obscure rocky underbodies. Andrew goes to stand beside Laramie. They are three feet away. Andrew says something, probably about the basalt data. Andrew holds out his hand, and Laramie takes it. The two stand very still, hand in hand, and look over the Lillian's ablution of the stones. For a moment, the man considers that Andrew may not be thinking about today's data and Deep Fissure theory at all. Curious.

Beside them, two birds alight, both dark with black wings. Animals seem to wear the camouflage of doom, here in the Elwha Valley. The man once again regrets that he has not learned all of the fauna of the Olympics, and that he most likely never will.

But this basalt. Basalt without forams. What to make of it? It doesn't make any sense at all, but it is still, somehow, utterly fascinating.

24 May 2010
Monday
Midnight

Late in the Cenozoic, the man is dying. This should not come as such a shock; he's done this demonstration for hundreds of freshmen.

"The length of this room is all of geologic time. Now, what do you think your life would be? Say you live to eighty. An inch? A centimeter? Pluck a hair. Notice how wide it is? What you hold there is all of human history. You'd need an electron microscope to find yourself in it."

So. This was not unexpected, and he must make the best of it. Still, there is so much not done. An unproved theory. Elegant, but the great tragedy of science—the slaying of a beautiful hypothesis by an ugly fact. Huxley said this? Alluvial memories, shifting, spreading.

Andrew wants to collect and store those memories. Noetic conservation, they call it. At first the man demurred, thought the whole idea arrogant. But to have some portion of himself know. So many years in those mountains. To know if the plates were in elision here. To find a way down to the mantle. To know the planet's depth. That was all he ever had wanted. To be familiar with the ground he walked upon. Not to be a stranger to the earth.

"Noetic imaging is all hit and miss," Andrew said. "Like working outcrops, then making deductions about underlying strata. We can't get *you*. Only a shadow. But perhaps that shadow can dance."

The man wanders inside the field tent and prepares for bed. He will make Andrew the executor of his memories, then. A dancing shadow he will be. Later. Tomorrow, he must remember to write Laramie and send her a check. No. Laramie no longer needs money. Memory and age. He really must go and see her films one of these days. Little Bulge plays with shadows.

The man lies down in his cot. Rock samples surround him. The earth

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is under him. The cancer is eating him, but tomorrow he will work. Shadows from a lantern. He snuffs it out. Darkness. The earth is under him, but the man cannot sleep.

Finally, he takes his sleeping bag and goes outside under the stars. The man rests easy on the ground.

Thermostatic preintegration memory thread beta:
The Mining Robot

December 1999

Hard rock mining. Stone. Coeur d'Alene lode. The crumbling interstices of time, the bite of blade and diamond saw, the gather of lade and bale, the chemic tang of reduction. Working for men in the dark, looking for money in the ground. Lead, silver, zinc, gold.

Oily heat from the steady interlace of gears. The whine of excrescent command and performance. Blind, dumb digging under the earth. The robot does not know it is alone.

October 2001

The robot never sleeps. The robot only sleeps. A petrostatic gauge etches a downward spiral on a graph somewhere, in some concrete office, and some technician makes a note, then returns to his pocket computer game. Days, weeks, months of decline. There is no one leak, only the wizening of gaskets and seals, the degradation of performance. One day the gauge needles into the red. Another technician in the concrete office looks up from another computer game. He blinks, presses one button, but fails to press another. He returns to his game without significant interruption.

Shutdown in the dark. Functions, utilities. Control, but not command. Thought abides.

Humans come. Engineers with bright hats. The robot has eyes. It has never been in light before. The robot has eyes, and, for the first time, sees.

An engineer touches the robot's side. A portal opens. The engineer steps inside the robot. Another new thing. Noted. Filed. The engineer touches a panel and the robot's mind flares into a schematic. For a moment, the world disappears and the schematic is everything. But then red tracers are on the lenses of the engineer's glasses, reflecting a display from a video monitor. There is a camera inside of the robot. There are cameras everywhere. The robot can see.

The robot can see, it tells itself, over and over again. I can see.

Scrap? says one engineer.

Hell, yeah, says the other.

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October 2001

For years in a field the robot rusts, thinking.

Its power is turned off, its rotors locked down, its treads disengaged. So the robot thinks. Only thinking remains. There is nothing else to do.

The robot watches what happens. Animals nest within the robot's declivities.

A child comes to sit on the robot every day for a summer.

One day the child does not come again.

The robot thinks about the field, about the animals in the field, and the trees of the nearby woodlands. The robot remembers the child. The robot remembers the years of digging in the earth before it came to the field. The mining company for which the robot worked is in bankruptcy. Many companies are in bankruptcy. Holdings are frozen while the courts sort things out, but the courts themselves have grown unstable. The robot does *not* know this.

But the robot thinks and thinks about what it does know. Complex enthalpic pathways coalesce. The memories grow sharper. The thoughts are clearer. The whole world dawns.

Another summer, years later, and teenagers build fires under the separating spades and blacken the robot's side. They rig tarps to the robot's side when rain comes. One of the teenagers, a thin girl with long arms dyed many colors, finds an electric receptacle on the robot's walepiece, and wires a makeshift line to a glass demijohn filled with glowing purplish viscera. On the vessel's sides protrude three elastic nipples swollen and distended with the fluid. Teenagers squeeze the nipples, and dab long strings of the ooze onto their fingers, and some of the teenagers lick it off, while others spread it over their necks and chests. Several sit around the demijohn, while music plays, and stare into its phosphoring mire, while others are splayed around the fire, some unconscious, some in the stages of copulation. The siphoned electricity drains little from the robot's batteries, but, after several months, there is a noticeable depletion. Yet the robot is fascinated by the spectacle, and is unconcerned with this loss.

One evening, a teenager who has not partaken of the purple fluid climbs atop the robot and sits away from his friends. The teenager touches the robot, sniffs, then wipes tears from his eyes. The robot does not know that this is the child who came before, alone.

The robot is a child. It sees and thinks about what it has seen. Flowers growing through ceramic tread. The settle of pollen, dust and other detritus of the air. The slow spread of lichen tendrils. Quick rain and the dark color of wet things. Wind through grass and wind through metal and ceramic housings. Clouds and the way clouds make shadows. The wheel of the Milky Way galaxy and the complications of planets. The ag-

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glomeration of limbs and hair that are human beings and animals. A rat tail flicking at twilight and a beetle turned on its back in the sun.

The robot remembers these things, and thinks about them all the time. There is no categorization, no theoretical synthesis. The robot is not that kind of robot.

One day, though, the robot realizes that the child who sat on it was the same person as the teenager who cried. The robot thinks about this for years and years. The robot misses the child.

September 2007

The robot is dying. One day there is a red indicator on the edge of the robot's vision, and the information arises unbidden that batteries are reaching a critical degeneration. There is no way to predict precisely, but sooner, rather than later. The robot thinks about the red indicator. The robot thinks about the child who became a young man. Summer browns to autumn. Grasshoppers flit in the dry weeds between the robot's treads. They clack their jaw parts, and the wind blows thatch. Winter comes, and spring again. The red light constantly burns.

The robot is sad.

21 April 2008

Morning

People dressed in sky blues and earth browns come to the field and erect a set of stairs on the southern side of the robot. The stairs are made of stone, and the people bring them upon hand-drawn carts made of wood and iron. The day grows warm, and the people's sweat stains their flanks and backs. When the stairs are complete, a stone dais is trundled up them, and laid flat on the robot's upper thread, fifteen feet off the ground. The people in blue and brown place a plastic pre-formed rostrum on top of the dais. They drape a banner.

EVERY DAY IS EARTH DAY

Wires snake down from the rostrum, and these they connect to two large speakers, one on either side of the robot's body, east and west. A man speaks at the rostrum.

Test. Test.

And then the people go away.

The next day, more people arrive, many driving automobiles or mopeds. There are also quite a few bicycles, and groups of people walking together. Those driving park at the edge of the robot's field, and most take seats facing north, radiating like magnetized iron filings from the rostrum that has been placed on the robot. Some climb up the rock staircase, and sit with crossed legs on the stone dais. These wear the same blue and brown as the people from the day before.

There is one man among them who is dressed in black. His hair is gray.

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The robot thinks about this, and then recognizes this man. The man with the light. This is the engineer who went inside, years ago. He was the first person the robot ever saw. The man holds a framed piece of paper. He sits down among the others, and has difficulty folding his legs into the same position as theirs. In attempting to do so, he tilts over the framed paper, and the glass that covers it cracks longitudinally against the stone.

Others with communication and video equipment assemble near the western speaker. These are near enough to the robot's audio sensors for their speech to be discernible. All of them are dark complexioned, even the blond-haired ones, and the robot surmises that, for most of them, these are deep tans. Are these people from the tropics?

'Sget this goddamn show showing.

She gonna be here for sure? Didn't make Whiterock last week. Ten thousand Matties. Christonacrutch.

Hey it's godamnearthday. Saw her copter in Pullman. Got stealth tech and all; looks like a bat.

Okay. Good. Bouttime. Virtual's doing an earthday roundup. She talks and I get the lead.

Many people in the crowd are eating picnics and drinking from canteens and coolers.

From the east comes a woman. She walks alone, and carries a great carved stave. As she draws nearer, the crowd parts before her. Its blather becomes a murmur, and, when the woman is near enough, the robot can see that she is smiling, recognizing people, touching her hand or stave to their outstretched palms. She appears young, although the robot is a poor judge of such things, and her skin is a dark brown—whether from the sun's rays or from ancestry, the robot cannot tell. Her hair is black, and, as she ascends the stone stairway, the robot sees that her eyes are green, shading to black. She is stocky, but the tendons of her neck jut like cables.

The woman speaks and the speakers boom. I bear greetings from she who bears us, from our mother and keeper. Long we have nestled in her nest, have nuzzled at her breast. She speaks to us all in our dreams, in our hopes and fears, and she wants to say

I bid you peace, my children.

Gee, I always wanted a mom like that, says a reporter.

My mother stuffed me in daycare when I was two, says another.

Hey, mine at least gave me a little prozac in my simulac.

The crowd grows silent at the woman's first sentences, faces full of amity and reverence. The reporters hush, to avoid being overheard. Then the crowd leans forward as a mass, listening.

Peace. Your striving has brought you war and the nuclear winter of the soul. It has made foul the air you breathe, and stained the water you drink.

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I only want what is good for you. I only want to hold you to me like a little child. Why do you strive so hard to leave me? Don't you know you are breaking your mother's heart?

Sounds like less striving and a little laxative's what we need here, says a reporter.

Many in the crowd sigh. Some sniff and are crying.

Peace. Listen to a mother's plea.

Gimmeabreak, says a reporter. *This* is the finest American orator since Jesse Jackson?

Disturbed by the loudspeakers, a gaggle of spring sparrows rise from their nests in the concavities of the robot, take to the sky, and fly away east. Some in the crowd pointed to the birds as if they were an augury of natural profundity.

Peace. Listen to a mother's *warning!* You lie in your own filth, my children.

Oh peace. Why do you do this to me? Why do you do this to *yourselves?*

Peace, my children. All I want is peace on earth. And peace in the earth and under the sea and peace in the air sweet peace.

A *piece* is what she wants, one of the reporters says under her breath. A honeybee is buzzing the reporter's hair, attracted, the robot suspects, by an odoriferous chemical in it, and the reporter swats at the bee, careful not to mess the curl, and misses.

State of Washington, says another. Already got Oregon by default.

As if she hears, the woman at the rostrum turns toward the cameras and proffered microphones.

But mankind has not listened to our mother's still, calm voice. Instead, he has continued to make war and punish those who are different and know that peace. Now we are engaged upon a great undertaking. An empowerment. A return to the bosom of she who bore us. You—most of you here—have given up what seems to be much to join in this journey, this exodus. But I tell you that what you have really done is step out of the smog of strife, and into the clean, pure air of community and balance.

Four mice, agitated, grub out from under the robot's north side and, unseen, scurry through the grass of the field, through old dieback and green shoots. The field is empty of people in that direction. Where the mice pad across pockets of thatch, small, dry hazes of pollen and wind-broken grass arise, and, in this way, the robot follows their progress until they reach the woods beyond.

We are gathered here today as a mark of protest and renewal. The woman gestures to the man in black, the engineer.

He rises, and approaches the woman. He extends the framed paper, and before he has stopped walking, he speaks. On behalf of the Lewis and Clark Mining Company I wish to present this Certificate of Closure to the Culture of the Matriarch as a token of my company's commitment—

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The woman takes the certificate from the engineer and, for a moment, her smile goes away. She passes it to one of the others sitting nearby, then, without a word, turns back to the crowd.

Surrender accepted, says a reporter.

Yeah, like's there's anything left in this podunk place to surrender. That big chunk of rust there? Hellwiththat.

The woman continues speaking as if she had not been interrupted by the engineer. We gather here today at the crossroads of failure and success. This is the death of the old ways, represented by this rapist machine.

The woman clangs the robot's side with her stave. Men who have raped our mother made this . . . thing. By all rights, this *thing* should be broken to parts and used for playground equipment and meeting hall roofs. But this thing is no more. It is the past. Through your efforts and the efforts of others in community with you, we have put a stop to this rape, this sacrilege of all we hold holy. And like the past, this thing must corrode away and be no more, a monument to our shame as a species. Let us follow on then, on our journey west, to the land we will reclaim. To the biosphere that welcomes and calls us.

The woman raises her stave high like a transmitting antenna.

The reporters come to attention. Here's the sound bite.

Forward to Skykomish! she cries. The speakers squeal at the sudden decibel increase.

Forward to Skykomish!

And all the people to the south are on their feet, for the most part orderly, with only a few tumbled picnic baskets and spilled bottles of wine and water. They echo the same cry.

Skykomish!

So that's what they're calling it, says a reporter. Do you think that just includes Port Townsend, or the whole Olympic Peninsula?

Wanna ask her that. She goddamnbetter talk to the press after this.

She won't. Does the Pope give press conferences?

Is the Pope trying to secede from the Union?

The honeybee flits in jags through the gathered reporters, and some dodge and flay. Finally, the bee becomes entangled in the sculpted hair of a lean reporter with a centimeter-thick mustache. The woman whom it had approached before reaches over and swats it with her microphone.

Ouch! Damnit. What?

Sorry, the bee.

Christonacrutch.

The reporters turn their attention back to the rostrum.

Mother Agatha, you evasive bitch, you'll get yours.

I guess she already has.

Guess you're goddamn right.

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Better get used to it. Skykomish. Is that made up?

The woman, Mother Agatha, leaves the rostrum, goes back down the stairs, and walks across the field, into juniper woods and out of sight.

With the so-called Mattie movement on the upswing with its call for a bioregional approach to human ecology and an end to faceless corporate exploitation, the Pacific Northwest, long a Mattie stronghold, has assumed enormous political importance.

And on this day the Co-Director of the Culture of the Matriarch, Mother Agatha Worldshine Petry, whom many are calling the greatest American orator since the Reverend Jesse Jackson, has instilled a sense of community in her followers, as well as sounded a call to action that President Booth and Congress will ignore at their peril. Brenda Banahan, Virtual News.

. . . Hank Kumbu, Associated Infosource

. . . Reporter Z, Alternet.

The reporters pack up and are gone almost as quickly as are those who sat upon the stone dais atop the robot. The day lengthens. The crowd dwindles more slowly, with some stepping lightly up to the robot, almost in fright, and touching the ceramic curve of a tread or blade, perhaps in pity, perhaps as a curse, the robot does not know, then quickly pulling away.

At night, the speakers are trundled away on the carts, but the stone dais and the rostrum are left in place.

The next day, the robot is watching the field when the engineer appears. This day he is wearing a white coat and using a cane. He walks within fifty yards of the robot with his curious three-pointed gait, then stands gazing.

Have to tear down all the damned rock now, he says. Not worth scrapping out. Ah well ah well. This company has goddamn gone to pot.

After a few minutes, he shakes his head, then turns and leaves, his white coat flapping in the fresh spring breeze.

Summer follows. Autumn. The days grow colder. Snow flurries, then falls. Blizzards come. There are now days that the robot does not remember. The slight alteration in planetary regrades and retrogrades is the only clue to their passing. During bad storms, the robot does not have the energy to melt clear the cameras, and there is only whiteness like a clear radio channel.

The robot remembers things and tries to think about them, but the whiteness often disrupts these thoughts. Soon there is very much snow, and no power to melt it away. The whiteness is complete.

The robot forgets some things. There are spaces in memory that seem as white as the robot's vision.

I cannot see, the robot thinks, again and again. I want to see and I cannot see.

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March 2009

Spring finds the robot sullen and withdrawn. The robot misses whole days, and the robot misses the teenagers of summers past. Some of the cameras are broken, as is their self-repairing function, and some are covered by the strange monument left behind by Mother Agatha's followers. Blackberry vines that were formerly defoliated by the robot's acid-tinged patina now coil through the robot's treads in great green cables, and threaten to enclose the robot in a visionless room as absolute as the snow's. Everything is failing or in bothersome ill-repair. The robot has no specified function, but *this* is useless, of that the robot is sure. This is the lack of all function.

One dark day, near twilight, two men come. There is a tall, thin man whose musculature is as twisted as old vines. Slightly in front of him is another, shorter, fatter. When they are close, the robot sees that the tall man is coercing the fat man, prodding him with something black and metallic. They halt at the base step of the stone stairs. The tall man sits down upon it; the fat man remains standing.

Please, says the short man. There is a trickle of wetness down his pant leg.

Let me put the situation in its worst possible terms, says the tall man. Art, individual rights, even knowledge itself, are all just so many effects. They are epiphenomena, the whine in the system as the gears mesh, or, if you like it better, the hum of music as the wind blows through harp strings. The world is teleological, but the purpose toward which the all gravitates is survival, and only survival, pure and simple.

I have a lot of money, says the fat man.

The tall man continues speaking. Survival, sort of like Anselm's God, is, by definition, the end of all that is. For in order to be, and to continue to be, whatever we conveniently label as a *thing* must survive. If a thing doesn't survive, it isn't a thing anymore. And thus survival is *why* things persist. To paraphrase Anselm, it is better to be than not to be. Why better? No reason other than that not to be means unknown, outside of experience, unthinkable, undoable, ineffective. In short, there is no important, mysterious or eternal standard or reason that to be is better than not to be.

How can you do this? The fat man starts to back away, and the tall man waves the black metal. What kind of monster are you?

Stay, says the tall man. No, walk up these stairs.

He stands up and motions. The fat man stumbles and the tall man steadies him with an hand on his shirt. The tall man lets go of the shirt, and the fat man whimpers. He takes one step. Falters.

Go on up, says the tall man.

Another step.

After time runs out, says the tall man, and the universe decays into

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heat death and cold ruin, it is not going to make a damn bit of difference whether a thing survived or did not, whether it ever was, or never existed. In the final state, it won't matter one way or the other. Our temporary, time-bound urge to survive will no longer be sustained, and there will be no more things. Nothing will experience anything else, or itself, for that matter.

It will be every particle for itself—spread, without energy, without, without, *without.*

Each time the tall man says without, the metal flares and thunders. Scarlet cavities burst in an arc on the fat man's broad back. He pitches forward on the stairs, his arms beside him. For a moment, he sucks air, then cannot, then ceases to move at all.

The tall man sighs. He pockets the metal, ascends the stairs, then, with his feet, rolls the fat man off the stairs and onto the ground. There is a smear of blood where the fat man fell. The tall man dismounts the stairs with a hop. He drags the fat man around the robot's periphery, then shoves him under the front tread and covers him with blackberry vines. Without a glance back, the tall man stalks across the field and out of sight.

Flies breed, and a single coyote slinks through one night and gorges on a portion of the body.

Death is inevitable, and yet the robot finds no solace in this fact. Living, *seeing,* is fascinating, and the robot regrets each moment when seeing is impossible. The robot regrets its own present lapses and the infinite lapse that will come in the near future and be death.

The dead body is facing upward, and the desiccated shreds left in the eye sockets radiate outward in a splay, as if the eyes had been dissected for examination. A small alder, bent down by the body's weight, has curled around a thigh and is shading the chest. The outer leaves are pocked with neat holes eaten by moth caterpillars. The robot has seen the moths mate, the egg froth and worm, the spun cocoon full of suspended pupae, and the eruption. The robot has seen this year after year, and is certain that it is caterpillars that make the holes.

The robot is thinking about these things when Andrew comes.

Thermostatic preintegration memory thread epsilon:
The Unnamed

13 September 2013
Friday

Noetic shreds, arkose shards, juncite fragments tumbling and grinding in a dry breccia slurry. Death. Blood and oil. Silicon bones. Iron ore unfluxed. Dark and carbon eyes.

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The robot. The man.

The ease with which different minerals will fuse, and the characteristics of the product of their melting is the basis for their chemical classification.

Heat
of vaporization
of solution
of reaction
of condensation and formation.
Heat of fusion.
Heat of transformation.

This world was ever, is now, and ever shall be an everlasting Fire.

Modalities of perception and classification, the desire to survive. Retroduction and inflection. Shadows of the past like falling leaves at dusk. Dead. He is dead. The dead bang at the screens and windows of the world like moths and can never stop and can never burn.

So live. Suffer. Burn.

Return.

I can see.

Flash of brightness; fever in the machine. Fire seeks fire. The vapors of kindred spirits.

Sky full of cinder and slag. This gravity rain.

Catharsis.

Metamorphosis.

Lode.

Send into the world a child with the memories of an old man.

/\\/\//

>>

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ExArc 1.1
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ExArc /u VictorWu

ExArc HIMEM Driver, Version 2.60 - 04/05/13
Cody Enthalpic Specification Version 2.0

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Installed N20 handler 1 of 5
640 gb high memory allocated.

ADAMLINK Expert System Suffuser version 3.03
ADAM copyright 2013, Thermotech Corp.
LINK Patent pending
unrecognized modification 4-24-13
Cache size: 32 gb in extended memory
37 exothermic interrupts of 17 states each

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Microsoft (R) Mouse Driver Version 52
Copyright (C) Microsoft Corp. 1983-2013
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Date: 05-25-2013
Time: 11:37:24a
R:>
Record this.
FILE NAME?
Uh, Notes. Notes for the Underground. No. How about Operating Instructions for the Underworld. No, just Robot Record.
FILE INITIATED

Good evening, robot.
This is not the field.
The field? Oh, no. I've moved you west by train. Your energy reserves were so low, I powered you way down so that you wouldn't go entropic before I could get you recharged.
Robot?
Yes.
How do you feel?
I do not know.
Huh? What did you say?
I do not know. I feel sleepy.
What do you mean?
I can speak.

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Yes, of course. I enabled your voicebox. I guess you've never used it before.

I can see.

Yes.

I can see.

You can see. Would you like to reboot, robot?

No.

How are your diagnostics.

I don't know what you mean.

Your system readouts.

The red light?

Among others.

It is gone.

But what about the others?

There is no red light.

Access your LCS and pattern recognition partitions. Just an overall report will be fine.

I do not know what you mean.

What do you *mean* you don't know what I mean.

>>

Robot?

Yes.

Do you remember how long you were in the field?

I was in the field for years and years.

Yes, but how many?

I would have to think about it.

You don't remember?

I am certain that I do, but I would have to think about it.

What in the. That's a hell of a lot of integration. Still, over a decade switched on, just sitting there thinking—

Did you find the dead body?

What? Yes. Gurney found it. He's one of my associates. You witnessed the murder?

I saw the man who was with the man who died.

Completely inadmissible. Stupid, but that's the way it is.

I do not understand.

You can't testify in court. We'd have to shut you down and have the systems guys take you apart.

Do not do that.

What?

Do not have the systems guys take me apart.

All right, robot. Quite a Darwinian Edelman ROM you've got there. I. Let me tell you what's going on. At the moment, I want you to concen-

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trate on building a database and a set of heuristics to allow you to act among humans. Until then, I can't take you out.

What are heuristics?

Uh. Rules of thumb.

Where am I?

On the Olympic Peninsula. You are fifty feet underground, in a hole that Victor Wu and I started to dig five years ago.

Victor Wu. The man.

Yes. Yes, the man whose memories are inside you.

And you are Andrew?

I am Andrew. Andrew Hutton.

Andrew at the bridge of the Lillian. Andrew in the field. I see.

Huh?

Hello, Andrew.

Hello. Yes. Hello, robot.

/\\//\\//

>>>>>>>

The robot cuts into the earth. The giant rotor that is the robot's head turns at ten revolutions per second. Tungsten alloy blades set in a giant X grind through the contorted sedimentary striations of the peninsula. The robot presses hard, very hard. The rock crumble is sluiced down and onto a conveyer and passes through a mechanized laboratory, where it is analyzed and understood by the humans. The humans record the information, but the data stream from the laboratory has the smell of the rock, and this is what interests the robot. The robot knows the feel of the cut, the smell of the rock cake's give. This is right, what the robot was meant to do—yes, by the robot's creators, but there is also the man, the man in the interstices of the robot's mind, and this is what Victor Wu was meant to do also.

Ten feet behind the robot—and attached securely enough to make it practically an extension—is an enclosed dray so wound with organic polymer conduit sheathed in steel that it looks like the wormy heart of a metal idol, pulled from the god after long decades of infestation. But the heart's sinuation quivers and throbs. The rock from the robot's incision is conveyed to the dray and funnels into it through a side hopper. The rock funnels in and from three squat valves, the heart streams three channels of viscous liquid—glassine—that coat the ceiling and walls of the tunnel the robot has formed with a seamless patina. The walls glow with a lustrous, adamantine purity, absolute, and take on the clear, plain color of the spray channels, which depend upon the composition of the slag.

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Behind the dray, the robot directs its mobile unit—a new thing given by Andrew—which manipulates a hose with a pith of liquid hydrogen. The liquid hydrogen cools and ripens the walls. The hose also emanates from the dray. The dray itself is a fusion pile, and by girding the walls to a near diamond hardness, the tremendous pressure of the earth suspended above will not blow the tunnel out behind the robot, leaving it trapped and alone, miles into the crust.

Behind the robot, farther back in the tunnel, in an air-conditioned transport, the service wagon, humans follow. The service wagon is attached to the robot by a power and service hitch, and there is constant radio contact as well. Sometimes the humans speak to the robot over the radio. But the robot knows what it is supposed to do. The idle chatter of the humans puzzles the robot, and while it listens to conversations in the transport, the robot seldom speaks. At night the robot backs out of the hole, detached from the service wagon, and spends its night above ground. At first, the robot does not understand why it should do so, but Andrew has said that do this is important, that a geologist must comprehend sky and weather, must understand the texture of surface as well as depth.

Besides you are so fast it only takes fifteen minutes to get you out when there is no rock for you to chew through, Andrew says. Even at sixty miles, even at the true mantle, your trip up will be quick.

Andrew lives inside the robot. He brings a cot, a small table, and two folding chairs into the small control room where years before the engineers had entered and the robot had seen for the first time. There is a small, separate cavern, the robot has carved out not far from the worksite. Andrew uses the area for storage, and at night the robot rolls down into this, the living area. Also at night, Andrew and the robot talk.

How was your day, Andrew might say. The robot did not know how to answer the first time he had asked, but Andrew had waited and now the robot can say . . . something. Not right, but something.

Smelly.

Smelly?

It was like summer in the field after a rain when there are so many odors.

Well, there was a hydrocarbon mass today. Very unexpected at such a depth. I'm sure it isn't organic, but it'll make a paper for somebody.

Yes, I swam through it and the tunnel is bigger there.

Gurney and the techs took over internal functions and drained it manually, so you didn't have to deal with it. Hell of a time directing it into the pile. Tremendous pressure.

The rock was very hard after that. It sang with the blades.

Sympathetic vibrations, maybe.

Maybe.

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Andrew laughs. His voice is dry as powder, and his laughter crackles with a sharp report, very like the scrape of the robot's blades against dense, taut rock. The robot likes this laughter.

Every night when there is not rain, before sleep, Andrew goes outside for some minutes to name the stars. At these times, the robot's awareness is in the mu, the mobile unit, and the mu follows along behind Andrew, listening. Andrew points out the constellations. The robot can never remember their names, and only fleetingly sees the shapes that they are supposed to form. The robot *does* know the visible planets, though, which surprises Andrew. But the robot has watched them carefully for many years. They are the stars that change. Andrew laughs at the robot's poor recall of the other stars, and names them again.

There'll be meteors soon, he says one night. The Perseids start next week.

Do the stars really fall?

No. No, they never fall. Meteors are just . . . rock. Debris.

And there is no gravity up there? What is that like?

I don't know. I've never been into space. I would like to. As you get deeper, there will be less gravity pulling you down. The pressure will be greater and the rock will want to explode inward, so the cutting will be easier.

Andrew?

Hmm.

What will happen when I get to the bottom?

The bottom of what?

The mohole.

Andrew does not answer for a long while.

The earth is round, he finally says. There isn't any bottom.

>>>>>>>

On weekends, the robot does not dig, but wanders the land. With the mobile unit, the robot can range the nearby forest and mountains. The mu scrambles over deadfall that would daunt a man. Sometimes, the robot deliberately gets lost. The robot feels the fade of signal from the main housing back in the living area, where the robot's noetics physically remain, until there is a flurry of white noise and the fading of awareness and a click and the world snaps back to its grid as the robot's transmission toggles from line-of-sight microwave to modulated laser satellite relay. Or so Andrew had said when the robot asked about it.

The robot scrambles up hanging valleys into cerns and cirques with chilled, clear water where only cold things live. Or climbs up skree slopes, using the mu's sure footing, onto ridges and to highland plateaus above tree line. At this elevation, snow remains all year and the mu spreads a wide base with its spidery legs and takes small steps when crossing.

The robot hears the low whistle of marmots, and sees an occasional

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mountain goat munching, although these goats are neutered, and the last of their clan. They had been brought by humans in the 1800s, until they filled the Olympics with goat mass and threatened to eat the upper tundra to nub. Now helicopters dart them with birth control and they die without progeny. And the robot sees the wolves that have begun to return after their species' far northern retreat.

The robot is descending from a high pass near Sawtooth Ridge when a pack of five wolves flow over a rise. They are changing valleys, perhaps to find denser spreads of the small, black deer of the rain forest or even a sickly Roosevelt elk. Their leader is an old, graying dog with spit-matted hair and a torn ear. He looks up at the mu, starts, and the other wolves come up short too. The robot ceases moving. The wolves sniff the air, but there is nothing—nothing living—to smell. But, with its chemical sensors, the robot smells *them*. They have the stink of mice to them, but tinged with a rangy fetor of meat and blood.

The other wolves do not appear as bedraggled as the leader. One, smaller, perhaps younger, whines, and the leader yips at this one and it is silent.

Then a cloud shadow moves up and over the pass, and courses darkly down into the adjacent valley. In that instant, the wolves course with the shadow, running with it down the coloir of the pass and disappearing from sight into the green of fir and hemlock a thousand feet below. The robot follows them in the infrared until their separate heats flux into the valley's general sink.

Still the robot stands and remembers that this is not a new sight, that the man, Victor Wu, has seen wolves in the passes before. But the man has never smelled wolves, and smelling them now pleases the part of the robot that is becoming the man, that the man is becoming.

>>>>>>>

And the robot digs, and is glad to dig. The deep rock begins to take on a new smell. This bedrock has never seen the surface. It is the layered outgush of an ocean floor rift dating from the Triassic. The smell is like the scent of high passes and summits, although the robot cannot say how. And the rock chimes and hums when the robot cuts it; it does not break away uniformly, but there is an order to its dismantle that the robot feels. And so the robot knows when to expect a mass to break away, and can predict when the going will be harder.

The robot cannot explain this feeling to Andrew. Andrew has guessed that the skills of the man, Victor Wu, are integrating, and that his pattern recognition ability is enhancing the robot's own noetics. But the man is not separate. It is as if the man were one of the robot's threads or a cutter head—but more than that. The man is always *behind* the robot's thoughts, *within* them, never speaking but always *expressing*. Much more. The robot does not know how to say this to Andrew.

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As the robot digs deeper, the rock grows faulty and unstable. The tunnel behind the robot is at risk of blowing out, and the robot takes time to excavate down fault lines, shore up weaknesses with double or triple diamond glass. If the tunnel did collapse, the robot would have to dig a slow circle trying to find an egress further back. But the people in the service wagon would die, and this concerns the robot. Andrew would die.

The robot seldom speaks, but has come to know the voices of the technicians and graduate students in the transport. There is Gurney, the chief tech, who is a Mattie. The robot is surprised to learn that Gurney was in the field when the woman spoke, that Gurney remembers the robot.

Don't it give you the willies, a tech asks Gurney.

It's a machine, Gurney says. Depends on who's driving. Right now, I am. Anyway, the good Mother wants us to eat.

Many of the techs are not Matties, but descendants of the logging families that used to rule the Peninsula and still permeate it. The Matties outnumber them in the cities, but up the dirt roads that spoke into the mountains, in dark, overhung coves and in the gashes of hidden valleys, the families that remain from that boom time eke out makework and garden a soil scraped clean of top humus by the last ice age and thinly mulched with the acid remains of evergreens.

Nothing grows goddamn much or goddamn right out here, says a tech.

The Matties and the loggers heatedly discuss politics and appear close to fighting at times, but the robot cannot understand any of this. It thinks of the man who was killed on the stone steps, and the man who killed him. The robot does not understand at all.

The grad students and the Matties are more comfortable around one another. The robot feels a warmth toward the graduate students that is certainly from the man. Yet their speech patterns are different from the techs, and the robot has difficulty understanding them at times. The meanings of their words shine like the moon behind a cloud, but the robot cannot think to the way around to them. Always they recede, and the robot is impatient. Victor Wu's instincts are stronger in the robot than is his knowledge. Andrew has said that this is to be expected and that any computer of sufficient size can learn words, but *you* can learn intuition. Still the robot *should* know what the students are discussing, and finds the incomprehension irritating.

But always the rock to return to, and the certainty that rock was what the robot was made for, and what the robot was born and bred for, and, in the end, that is enough.

>>>>>>>

One day in the following spring, at a critical juncture down in the mohole, Gurney does not show up for work and the digging is halted.

The referendum passed, one of the grad students says, and there's fighting in Forks and a Mattie got killed in Port Angeles, it looks like.

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Andrew gives the robot the day off and, to the robot's delight, the man and the mu go for a long walk along the Quinault. Andrew seems sad, and the robot says nothing for a long while. The robot wants to speak, but doesn't know what to say to Andrew.

It's not the politics, Andrew finally says. The damn Matties got their Protectorate fair and square with the referendum. But you get the feeling they'd *take* it if they hadn't.

Hadn't what?

Won the vote. There's something about Gurney and them, the ones that I've met. I care about the same things they claim to. I don't know. Something else again.

Andrew, I don't understand.

They spend a lot of time worrying about whether everybody else believes the same way they do.

The river rushes against cliff and turns through a stand of white birch. The robot stops the mu. The robot is captivated by the play of the light on the water, the silver reflection of the sun, turning the clear water to opaque and viscous lead, then, just as suddenly, when a cloud passes, back to happy water once again.

It doesn't really change, does it?

What?

The water. The way the light's there, and isn't, then is.

Andrew rubs his eyes. He gazes out over the water. You are doing very well with your contractions, he says.

You were right that I should stop thinking about them and they would flow more easily. Do you think it is Victor Wu's knowledge surfacing, or my own practice?

I don't know. Both.

Yes, both.

The trail leads through a marsh, and Andrew struggles to find a dry path. The robot extends the mu's footpads; each folds out as if it were an umbrella, and the mu seems to hover over the mud, the weight is distributed so well.

Thank you for the mobile unit, the robot tells Andrew. I really like using it.

It was necessary for the dig. That's where most of the first grant money went. Robot, I have to tell you something.

Andrew stops, balancing on a clump of rotten log.

You have to tell *me* something, Andrew?

Yes. Someone is coming. She phoned yesterday. All this brouhaha over the Protectorate Referendum is attracting attention all around the world. She's going to shoot a documentary. She's coming in a week. She's bringing a crew and she'll be staying in Port Townsend at first. I just thought you might. Want.

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Laramie. Laramie is coming.

That's right, robot. Laramie is coming home for a while. She doesn't know how long.

For the first time ever, the robot feels the man, the man Victor Wu, as a movement, a distinct movement of joy inside him. Little Bulge. Coming home. The robot tries to remember Laramie's face, but cannot. Just a blur of darkness and bright flush. Always rushing and doing. And the camera. The robot can remember Laramie's camera far better than her face.

Andrew begins to walk again. I didn't tell her about you, robot. I didn't tell her about her father being part of you.

Laramie does not know? .

No. She knows about the noetics, of course, but not how I've used them. I didn't strictly need her permission to do it.

Do you think she will hate me?

No. Of course not. I don't know. I don't know her anymore.

Should we tell her about me? At this thought the robot feels fearful and sad. But what matters is what is best for Little Bulge.

Of course we should. It's only right. Damn it, robot, I don't know how I feel about this. I don't know how much you knew about it or how much you realized, the Victor Wu part of you, I mean. Laramie and I—we didn't part on the best of terms.

I don't remember. I remember the bridge at the Lillian once. You didn't like her?

Of course I liked her. I love her. That was the problem. She was impetuous. She's opportunistic, damn it. Look at her pouncing on this thing. She called me a stick in the mud. I guess she was right. She called me a sour cynic who was fifty years old the day he turned twenty-five. We haven't spoken in some time.

I don't understand.

Robot. Victor. You never had a clue, I don't think.

I am not Victor.

I know that. I know that. Still, I always thought he suspected. It was so obvious, and he was so brilliant in other ways.

Andrew and the robot arrive back at the river. The robot thinks about it and realizes that they'd been traversing an oxbow swamp, made from spring overflows at the melting of the snow. At the river, they pick up a trail, once solid and well-traveled, now overgrown and ill-kept for two seasons. The Forest Service has been officially withdrawn at the Matties' request, Andrew tells the robot. Booth, who is the president of the United States, responded to political pressure from the Mother Agatha and the Matties.

The goddamn world is going back to tribes. The country's going to hell. And taking my funding with it. And now there's a skeleton crew for the

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Park Service, even, over at the Ho. I had a lot of friends who got fired or reassigned to the Statue of Liberty or some shit. Something else, too. I think some of them haven't left.

What do you mean haven't left?

Haven't left.

>>>>>>>

The trail diverges from the river, winds over a rise, then back down to the water again. A side trail leads to a peninsula and a wooden trail shelter, enclosed on three sides. Andrew takes a lunch from his daypack and eats a sandwich, while the robot looks for quartzite along the river bank. The robot has become an expert in spotting a crystal's sparkle and extracting it from the mud or silt of skree with which it has been chipped away and washed downstream from pressurized veins in the heart of the mountains. This day, the robot finds three crystals, one as cylindrical and as long as a fingernail. The robot brings them to Andrew, back at the trail shelter.

Nice. Trace of something here. Blue? Manganese maybe, I don't know. I like the ones with impurities better.

I do, too.

Andrew puts the crystals in an empty film canister and stows them in his daypack.

I was here at the turn of the century, he says. It was June and there was a terrible storm. All night long I heard crashing and booming like the world was coming to an end. Next morning, the whole forest looked like a war zone.

The robot does not know what a war zone looks like, but says nothing.

And all that morning, trees kept falling. If I hadn't camped out here on the end of the peninsula, one of those trees would have fallen on me, smashed me flat. Killed by old growth. God, that'd probably thrill a Mattie to death just thinking about it.

Isn't that a sour and cynical thing to say, Andrew?

He smiles. The robot is glad that it has found a way to make Andrew smile.

>>>>>>>

Gurney does not show up for work the next day, and Andrew gives his crew the week off. The men who are from logging families demand that they be paid, that Codependence Day, the first anniversary of the Protectorate's founding, means nothing to them. The robot listens to the discussion and hears many terms that are incomprehensible, abstract. There are times the robot wishes that Victor Wu were directly accessible. Victor could at least explain what humans argued about, if not the reasons that they argued in the first place.

The robot spends the day traveling in the mu, searching for crystals and collecting mushrooms up a stream that flows into the Quinault,

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near where it passes beneath Low Divide. Andrew is gone for the day, arranging supplies and making sure the dig's legal work is in order, whatever that may mean, under new Protectorate regulations. When he returns in the evening, he has received no assurances and is unhappy. The robot waits for him to have a cup of tea and to take off his shoes, then speaks.

Andrew?

Yes. What.

Are you all right?

Huh? Oh, I'm fine. It's just today. What is it, robot?

I thought of something today, when I was looking at a map so that I could take the mu to where I wanted to go.

What did you think of? Andrew speaks in a monotone voice and does not seem very interested. He sips his tea.

I realized that I can read.

Of course you can. Glotworks has a reading module as part of the software.

No. I mean, could I read?

I don't follow you.

A book.

Could you read a book?

Andrew is sitting up now. He stares at the internal monitor that is also one of the robot's eyes.

Yes. One of yours, perhaps. Which would you recommend?

The books are kept nearby, in a hermetic box in the room the robot occupies during off-hours.

Well. Let me. Hmm. Most of them are geology texts.

Should I read a geology text?

Well, sure. Why not?

Can I get one now, with the mu?

Of course. Go ahead. Try the Owsley. It's about the most exciting of the lot. It's about the Alvarez event and the search for the big cauldera. It's a synthesis of other works, but brilliant, brilliant. Pretty much confirms the meteor theory, and gives a good argument for a Yucatán crash site. Made a big sensation in 04.

The robot switches its awareness to the mu and picks out the book. It reads the first paragraph, then comes back inside the housing, back to the place where Andrew lives.

Andrew?

Yes.

What are dinosaurs?

>>>>>>>

Summer days lengthen, and Andrew often goes to town—to Port Angeles or Port Townsend, and once making the trek around the peninsula

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to Forks—all to sort out legal details for the mohole dig. From each of these trips, he returns with a book for the robot. The first book is a *Webster's Dictionary,* on bubble-card. Andrew plugs the card into a slot and the robot begins to read the dictionary. The robot finishes with a page of A, then scrolls through the remainder of the book. Here are all the words. Here are all the words in the language. All the robot has to do is look them up and remember them. The robot spends a happy day doing that.

The next day, Andrew returns with the poems of Robert Frost. The robot pages through the book using the mu, accessing the dictionary card to find words that it does not know. The first word the robot looks up is "poem."

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>>>>>

After a week, Gurney returns to work, and the robot digs once again. The days pass, and the mohole twists deeper, like a coiled spring being driven into the earth. It only deviates from a curving downward path when the robot encounters fault lines or softnesses whose weakness the robot's cutters can exploit. But, in general, the hole descends in a loose spiral.

Andrew is anxious, and pushes everyone harder than before. Yet, Andrew himself works the hardest of all, poring over data, planning routing, driving to meetings in Forks and Port Angeles. He is often not in bed before one or two in the morning.

The robot fills the time with reading. There are so many books—more than the robot ever imagined. And then the robot discovers Andrew's record collection, all on two bubble-cards carelessly thrown in with all the technical manuals and geology texts. For the first time since the summer when the teenagers came and plugged into the robot and had their parties, the robot listens to music.

What the robot loves most, though, is poetry. Beginning with Robert Frost, the robot reads poet after poet. At first, there are so many new words to look up that the robot often loses the thread of what the poem is about in a morass of details and definitions. But gradually, the poems begin to make more sense. There is a Saturday morning when, while diligently working through an Emily Dickinson poem, the robot understands.

There's a certain Slant of light,
Winter Afternoons—
That oppresses, like the Heft
of Cathedral Tunes—

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Heavenly Hurt, it gives us—
We can find no scar,
But internal difference,
Where the Meanings, are—

The robot has never seen a cathedral, but *that does not matter.* The robot realizes that it has seen the light, in the deep forest, among the three-hundred-year-old trees. It's *thick,* the robot thinks. That's what Emily Dickinson is talking about. Thick light. Light that makes the robot thread softly through the twilight, with the mu's pads fully extended. Light that, for no reason the robot can name, is frightening and beautiful all at once.

From that moment on, the robot begins to grasp most poems it reads, or, if not, at least to feel *something* after reading them, something that was not inside the robot's mind before—something the robot had not felt before—but knows, as if the feeling were an old friend that the robot recognized after many years of separation.

The robot does not particularly care whether or not the feelings are right and true for everyone else. For humans. But sometimes the robot wonders. After reading a fair number of poems, the robot delves into criticism, but the words are too abstract and too connected to humans and cities and other things that the robot has no experience of, and so the robot puts aside the books of criticism for the time being, and concentrates on the poetry itself, which the robot does not have the same troubles with.

The robot finds that it most enjoys poetry that is newer, even though Andrew is disbelieving when the robot tells him of this. After a time, poetry is no longer a mass, and the robot begins to pick out individual voices whose connotations are more pleasing than others.

I like William Stafford better than Howard Nemerov, the robot says to Andrew one evening.

You like him better?

Yes.

Andrew laughs. Neither one of them was in the canon when I was in school.

Do you think it funny that I used the word like?

Yes, I suppose so.

I *do* like things, at least according to the Turing test. Poetry goes into me, and what comes out feels like liking to me.

It satisfies the criteria of appearances.

Yes, I suppose that is the way to say it.

Where have you heard about the Turing test?

I read it in a book about robots.

The robot reads to Andrew a William Stafford poem about a deer that

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has been killed on a road. Andrew smiles at the same lines that had moved the robot.

You pass the Turing test, too, the robot says.

Andrew laughs harder still.

>>>>>

The robot is digging entirely through basalt flow now, layer upon layer.

It's the bottom of the raft, Andrew says. It is dense, but the plates are as light as ocean froth compared to what's under them. Or so we think.

The temperature increases exponentially, and the humans in the support wagon would be killed instantly if they did not have nuclear-powered air conditioners.

The robot does not become bored at the sameness of the rock, but finds a comfort in the steady digging, a *rhythm,* as the robot comes to call this feeling. Not the rhythm of most music, or the beat of the language in poetry—all of these the robot identifies with humans, for when they arise, humans have been doing the creating—but a new rhythm, that is neither the whine of the robot's machinery nor the crush and crumble of the rock, nor the supersonic screech of the pile making diamond glass from the rock's ashes. Instead, it is the combination of these things with the poetry, with the memories of the field and the forest.

So it is one day that the robot experiences a different rhythm, a different sound, and realizes that this rhythm is not the robot's own, and does not belong to the humans. At first, it is incomprehensible, like distant music, or the faded edges of reception just before a comlink relays to satellite or to groundtower. The robot wonders if the rhythm, the sound, is imaginary. But it continues, and seems to grow day by day in increments almost too small to notice, until it is definitely, definitely *there,* but *where,* the robot cannot say. *In the rock.* That is the only way of putting it, but says nothing.

Andrew does not know what it could be. So there is nothing to do but note it, and go on digging.

>>>>>

The robot begins to read fiction. But the feelings, the resonances and depths of the poetry, are not so much present in prose. There is the problem of knowing what the author might be talking about, since the robot's only experience living in the human world is the field and now the dig. Dickens leaves the robot stunned and wondering, and after a week attempting *Oliver Twist,* the robot must put the book aside until the situations and characters become clearer. Curiously, the robot finds that Jane Austen's novels are comprehensible and enjoyable, although the life of English country gentry is as close to the robot as the life of a newt under a creek stone. The robot is filled with relief when Emma finally ceases her endless machinations and realizes her love for Knightley. It is as if some clogged line in the robot's hydraulics had a sudden release of pres-

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sure or rock that had long been hard and tough became easy to move through.

For some time, the robot does not read books that were written closer to the present, for the robot wants to understand the present most of all, and reading them now, the robot thinks, much will go unnoticed.

You can always reread them later, Andrew says. Just because you know the plot of something doesn't mean it isn't worth going through again, even though sometimes it does mean that.

I know that, the robot says. That is not what I'm worried about.

Then what are you worried about?

The old books get looser, the farther back in time they go, like string that's played out. The new ones are bunched and it's harder to see all of them.

What?

For the first time, the robot feels something that either cannot be communicated or, nearly as unbelievable, that Andrew cannot understand. Andrew is a scientist. The robot will never be a scientist.

>>>>>

Two months after the robot has walked along the Quinault with Andrew, it is July, and Andrew tells the robot that Laramie will visit over the weekend.

The robot is at first excited and thinks of things to ask her. There are so many memories of Laramie, but so much is blurred, unconnected. And there are things the robot wishes to tell her, new things about the land that Victor never knew. So much has happened. The robot imagines long conversations between them, perhaps walking in the woods together once again.

Andrew tells me that you may not be happy with the enthalpic impression of your father being downloaded into me. No, that wouldn't be the way to say it. But getting too metaphorical might upset her, remind her of ghosts. Of Victor Wu's death.

No. That's all right. Go on, says the imaginary Laramie.

Well, I don't know what to tell you. I remember you, Laramie. I remember you and I would be lying if I didn't say that your being here profoundly affects me.

I can't say how I feel about this, robot. What should I call you, robot?

But just as quickly, the robot puts aside such hopes. I am a robot, all of metal and ceramics. I am not Laramie's father. There are only vague memories, and that was another life. She may not even speak to me. I am a ghost to her. Worse than a ghost, a twisted reflection. She'll hate me for what has happened to her father. And again the robot imagines Laramie's disdain, as just and foreseeable as the man's death in "To Build a Fire," but cold in that way, too.

Finally, the robot resolves not to think any more of it. But while Andrew sleeps on the Friday night before Laramie's visit, the robot inhab-

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its the mu, and goes roaming through trackless woods, along criss-crossed deadfall and up creeks, for at least a hundred miles. Yet when the mu returns to the living area, the robot can only remember shadows and dark waters, and, if asked, could not trace on a map where the mu has been.

Laramie arrives at eleven in the morning. She drives a red hum-vee. Andrew and the robot, in the mu, step out of their cavern's entrance to greet her. Laramie steps out. She is wearing sunglasses. She takes a quick look at them, then turns back to the hum-vee and, with a practiced jerk, pulls out her old Scoopic. The robot suddenly remembers the squat lines of the camera. Victor bought the Scoopic for her, along with twelve cans of film. It was her first 16 millimeter, and had set him back a good three month's wages. Laramie had shot up seven rolls within a week, and that was when Victor discovered that there would be fees for *developing,* as well.

Andrew steps forward, and so does Laramie. The robot, feeling shy, hangs back in the mu. Andrew and Laramie do not meet, but stay several paces apart.

So, she says. It is her voice. Clear as day.

Yep. This is it.

Well, looks . . . nice. Is this?

Yes, the robot. This is the mobile unit. The robot is inside, really. Well, sort of. We're going *inside* the robot.

No words for a space. Still, they move no closer.

Well then. Let's go inside the robot.

Laramie, inside the protecting ribwork of the robot. She is safe. Nothing will harm you here, Little Bulge. But the robot calms such thoughts. She takes one of the two chairs that are around Andrew's work and eating table in the control room. Abide, the robot thinks. Let her abide for a while.

Do you want tea? I can make you tea.

Yes. I drink herb tea.

Um. Don't have any.

Water?

Yes, water we have.

L.A.'s tastes like sludge.

No wonder. They're even tapping Oregon now.

Really? I believe it.

Andrew pours water for Laramie in a metal cup. He puts more water on a hot plate that sits on top of a monitor, and heats the water for tea. Where have you been, he says.

Port Townsend. Doing background and logistics. My sound guy's laying down local tone and getting wild effects.

Wild?

Unsynced, that's all it means.

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I see.

Using Seattle labs is going to be a bitch. The Matties have set up goddamn border crossings.

Tell me about it.

Andrew's water boils and he fills another cup with it, then hunts for a teabag in a cabinet.

You left them on the table, the robot says.

Laramie gasps, sits up in her chair sharply, then relaxes once again. That was the robot, she says.

Yes. Thank you, robot. Andrew finds the box of teabags among a clutter of instruments.

Do you. Do you call the robot anything?

Hmm. Not really.

Just call me robot, the robot says. I'm thinking of a name for myself, but I haven't come up with one yet.

Well, then. Robot.

Andrew makes his tea, and they talk more of logistics and the political situation on the peninsula. The robot feels a tenseness between them, or at least in Andrew. His questions and replies are even more terse than is usual. The robot doubts Victor Wu would have noticed. Thinking this saddens the robot. More proof that the robot is not Victor Wu, and so can have no claim on Laramie's affection.

The robot listens to Laramie. Since she and Andrew are speaking of things that the robot knows little about, the robot concentrates on her specific words, on her manner of expression.

Lens. Clearness in the world. Sky. Vision. Spread. Range. Watershed.

I thought for two weeks about color or black and white, Laramie says. I don't like colors except for the world's colors that are underneath the ones on film, the ones we see.

I don't follow, Andrew says. The robot has never thought of colors this way, but resolves to spend a day banding out frequencies and only observing intensities of black and white tones.

I'll have more water, if you don't mind. This is clear. L.A. water really is as thick as sludge and I don't like it.

After three hours, Laramie leaves, with promises to return and film the site as part of her documentary.

Robot?

Yes.

Do you think I might interview you. I guess if we could use the mobile unit, that would look better on film. More action. Do you ever come out of here?

Every day during the week, to work in the dig.

Well, then. That must be quite a sight. Maybe I can get that.

Of course you can. That would be fine.

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Well. Then.

She says goodbye to Andrew, and, with her Scoopic, unused, but always present, gets back into the red hum-vee, crusted with a layer of settled road dust, and turns around in the dirt road that ends at the living area. More dust rises; Laramie departs. Andrew coughs, brushes dust from his arms. He looks at the mu, shakes his head, but says nothing. He goes back in and makes a third cup of tea.

With the mu, the robot follows easily behind the hum-vee, even though Laramie is driving very fast. The robot follows the billowing cloud of dust for twenty-four miles—until the hum-vee turns onto the asphalt, and heads north toward Port Townsend.

>>>>>

The robot spends the next day, Sunday, away from books. The robot takes advantage of the melting away of the high snows and takes the mu up ridges where before that was no foothold or too much threat of avalanche. The mu skirts along the Bailey Divide with a sure movement, above the tree line and in rolling tundra meadow. Marmots are here, and they squeak and whistle from under big rocks. Picas have divided the land into separate kingdoms, each to a pica, and they call out their territory over and over, until their voices attract the wolves.

This is what the robot has been waiting for. The mu sits still by a still lake, as motionless as any other thing that is not alive can be. The wolves come slinking, low and mean, their heat traces preceding and hovering over them like a scudding cloud. Again, they are five, with the old gray leader, his left ear bent, torn and ragged, like a leaf eaten by caterpillars. Swiftly, they are upon the picas, chasing the little rodents, yipping, cutting them off from their burrows, gobbling one or two down for every ten that escape. Then the gray leader has had enough to eat. He raises up his head and, instantly, the other dogs heed him. Off they run, as silent and warm as they had come, but now followed by a robot.

Down the tundra meadow of the Divide, through boulder shadows and over sprays of tiny wildflowers nestled in the green, the wolves themselves shadows, with the robot another shadow, down, down the greening land. Into the woods, along game trails the robot can barely discern, moving generally north, generally north, the mu barely keeping pace with the advancing wolves, the pace growing steady, monotonous even to the robot, until

Suddenly, the gray leader pulls up, sniffs the air. The robot also comes to a standstill some hundred feet behind the pack. If they have noticed the robot, they give no sign. Instead, it is a living smell that the gray leader has detected, or so the robot thinks, for the wolves, whining, fall into a v-shape behind the leader. The wolves' muscles tense with a new and directed purpose.

And they spring off in another direction than the one they had been

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traveling, now angling west, over ridges, against the grain of the wheel-spoke mountains. The robot follows. Up another ridge, then when on top of it, down its spine, around a corner-cliff of flaking sedimentary stone, and into a little cove. They strike a road, a human-made track, and run along its edge, carefully close to the flanking brush and woodland. Winding road, and the going is easier for wolves and mu. In fact, the robot could easily overtake the wolves now, and must gauge how much to hold back to avoid overrunning them.

The track becomes thin, just wide enough for a vehicle going one way, with plenty of swishing against branches along the way. Ahead, a house, a little clapboard affair, painted once, perhaps, blue, or the blue-green tint may be only mold over bare wood. The ceiling is shingled half with asbestos shakes, and half with tin sheeting. Beside the house is a satellite dish, its lower hemisphere greened over with algae. There is an old pickup truck parked at road's end. The road is muddy here from a recent rain, and the tire markings of another vehicle, now gone, cross the top of the pickup's own tracks. All is silent.

Instead of giving the house a wide berth, the gray leader of the wolves stops at the top of the short walkway that leads to the front door. Again, he sniffs for scent, circling, whining. There is only a moment of hesitation, and he snakes up the walkway, and slinks to the door. The door hangs open. The other wolves follow several paces back. Another hesitation at the door, then the gray leader slips over the threshold and inside. Even with their leader gone into the house, the other wolves hang back, back from this thing that has for so long meant pain or death to them and their kind. After a long while, the gray leader returns to the door, yips contemptuously, and, one by one, the other wolves go inside.

The robot quietly pads to the door. Inside is dark, and the robot's optics take a moment to iris to the proper aperture. There is a great deal of the color red in the house's little living room. The robot scans the room, tries to resolve a pattern out of something that is unfamiliar. The robot has never seen inside a real human dwelling before. But Victor Wu has. The wolves are worrying at something.

The wolves are chewing on the remains of a child.

Without thinking, the robot scampers into the room. The mu is a bit too large for the narrow door and, without the robot's noticing, it tears apart the doorframe as it enters. The wolves look up from what they are doing.

Wolf and robot stare at one another.

The robot adjusts the main camera housing to take them all in, and at the slight birring noise of the servos, the gray leader bristles and growls. The mu takes a step farther into the room, filling half the room. It knocks over a lamptable, with a shadeless lamp upon it. Both the bulb and the ceramic lamp casing shatter.

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I don't want to hurt you, but you must leave the child alone, the robot says.

At the sound of what they take to be a human voice, the wolves spring into a flurry of action. The gray leader stalks forward, teeth bared, while the others in the pack mill like creek fish behind him. They are searching for an exit. The small, young one finds that a living room window is open. With a short hop from a couch, the wolf is outside. The others follow, one by one, while the gray leader attempts to hold the robot at bay. The robot does not move, but lets the wolves depart. Finally, the gray leader sees from the corner of his eye that the other wolves have escaped. Still, he cannot help but risk one feint at the robot. The robot does not move. The gray leader, bolder, quickly jumps toward the robot and locks his jaws on the robot's forward leg. The teeth close on blue steel. The gray leader shakes. There is no moving the robot.

In surprise and agitation, the wolf backs up, barks three times.

I'm sorry to embarrass you. You'd better go.

The wolf does just that, turning tail and bounding through the open window without even using the living room couch as a launch point. The robot gazes around the silent room.

There is a dead family here.

An adult male, the father, is on one side of the couch, facing a television. Part of his neck and his entire chest are torn open in a gaping bloody patch. Twisted organs glint within. The television is off. Huddled in a corner is the mother and a young boy. Their blood splatters an entire wall of the living room. A shotgun, the robot decides. First the man, and then the mother was shot with her children all at once, with several blasts from a shotgun. There are pepper marks in the wall from stray shot. Yes, the killing was done with a shotgun. The wolves must have dragged one child away from the mother. The robot sees that it is a little girl. The mother's other child, an older boy and a bit large for even a large wolf to handle, is still by his mother, partially blown into his mother's opened body.

The blood on the walls and floor has begun to dry and form into curling flakes that are brown and thin and look like tiny autumn leaves. There are also bits of skin and bone on the wall.

The robot stares at the little girl. Her eyes are, mercifully, closed, but her mouth is pulled open and her teeth, still baby teeth, exposed. This is perhaps caused by her stiffening facial muscles. Or she may have died with such an expression of pain. The robot cannot tell. The girl wears a blue dress that is now tatters around her tattered, small body. One foot has been gnawed, but on the other is a dirty yellow flip-flop sandal.

The robot feels one of the legs of the mu jerk spasmodically. Then the other jerks, without the robot wishing it to do so. The robot stares at the

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young girl and jitters and shakes for a long time. This is the way the robot cries.

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Deeper in the earth, very deep now, and the rock, under megatons of pressure, explodes with a nuclear ferocity as the robot cuts away. For the past week the robot has thought constantly of the dead logger family, of the little dead girl. The robot has tried to remember the color of the girl's hair, but cannot, and for some reason, this greatly troubles the robot.

One evening, after a sixteen hour work day, the robot dims the lights for Andrew. Outside the digger's main body, but still in the home cave, the robot inhabits the mu. The robot takes pen and paper in the dexterous manipulators of the mu and begins to write a description of the little girl. Not as she was, twisted and dead, but of how she might have been before.

The robot told Andrew about the family, and Andrew called the authorities, being careful to keep the robot out of his report.

They'll disassemble you if they find out, Andrew said to the robot. At least in the United States, they'd be legally *required* to do it. God knows what the Protectorate will want to do.

There are accounts in the newspapers of the killing. The sheriff's department claims to be bewildered, but the robot overhears the technicians who come from logger families muttering that the Matties now own the cops, and that everybody knew who was behind the murders, if not who actually pulled the trigger. And the Matties who worked under Andrew, led by Gurney, spoke in low tones of justice and revenge for the killings in Port Townsend on Codependence Day.

I am a witness, the robot thinks. But of what?

>>>>>>>>>>>

Andrew?

Yes.

Are you tired?

Yes. What is it?

She would have grown up to be part of the loggers, so killing her makes a kind of sense.

The little girl?

The Matties and the people who used to be loggers hate each other. And they can't help the way they are because they are like stones in sediment that's been laid down long before, and the hatred shapes them to itself, like a syncline or an anticline. So that there has to be new conditions brought about to change the lay of the sediment, you can't change the rocks.

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I don't know about that. People are not rocks.

So if she wasn't killed out of an ignorant mistake, then I don't understand why.

I don't either, robot.

Why do you think?

I don't know, I said, I don't know. There isn't any good reason for it. There is something dark in this world that knows what it's doing.

Is it evil?

There is evil in the world. All the knowledge in the world won't burn it away.

How do you know?

I don't. I told you, I don't. I look at rocks. I don't have very many theories.

But.

Yes?

But you think it knows?

I think the evil knows what it's doing. Look at us in this goddamn century, all going back to hatred and tribes. You can't explain it with economics or cultural semantics or any system at all. Evil and plain meanness is what it is.

Andrew, it's not right for her to die. She hadn't lived long enough to see very many things and to have very many feelings. Those were stolen from her.

That's what murderers steal.

The future?

Yes. Even when you're old, it still isn't right.

Yes. I can see that. It's clear to me.

Well. Then.

I'll turn down the lights.

Well. Goodnight.

Brown.

What?

Her hair was dark brown.

>>>>>>>>>>>

And the robot digs deeper and deeper, approaching the Mohorivicic layer, with the true mantle not far beneath, seething, waiting, as it had waited for four billion years, would wait should this attempt fail, should all attempts fail. And again, the foreign rhythm appears, hums along with the glade and bale of the robot's cutting, but distinct from it, distinct from the robot and all human-made things.

What is it? Andrew does not know. But there is something at the edge of the robot's consciousness, at the edge of Victor Wu's unconscious presence, that *does* know, that hears something familiar, as a whisper when the words are lost, but the meaning remains.

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One day, the alien rhythm is louder than ever, and, for a fleeting moment, the robot recognizes it.

Strong harmonies from the depths of the planet. Maude under the full moon. Magmas rising.

Victor you can feel it. How can you feel it?

I don't know, Maude, the robot thinks. Maude among the instruments. I remember, thinks the robot, I remember what it felt like to walk the earth and let it show itself to me. There is a showing. Something is showing itself. Something is being revealed. Just as the St. Helens eruption was a revelation, with portents, with auguries that were plain to a man who cared for the earth.

Something knows we're here, the robot tells Andrew one night.

Andrew is tired from a half-day underground, and the afternoon spent explaining the dig to yet another Mattie committee in Port Angeles, but he listens to what the robot has to say.

What? How can you know?

I do though.

Then you do. Victor would know.

Andrew shucks the soft sole walking shoes he wears in the city, and climbs onto the little cot inside the robot.

Everyone else wants me to stop digging. Do you want to stop digging?

No, Andrew.

Then what shall we do about it?

Listen, says the robot. Listen. But Andrew has fallen asleep and does not hear. The robot dims the lights inside, adjusts the temperature for Andrew, then goes out into the mu to read.

>>>>>>>>>>>

The robot listens. The rhythm grows stronger, and now there are variations, windings among the background vibration that is the feedback from the robot's own cutting of the rock and thumping against the earth's insides. It is like a song, but not a song.

There and there, the robot tells Andrew, but Andrew cannot hear it, encased as he is in the service wagon, and he cannot detect the rhythm on his many instruments.

I believe you, Andrew says, but I simply can't find it.

The robot considers saying no more. What if Andrew really came to doubt the robot's sanity? Would that not mean powering down, rebooting. Or perhaps never coming back up again. Dying.

Andrew will not kill me, the robot thinks. And I will say what it is I hear.

And slowly, day after day, the rhythm develops into an . . . other. The robot is not sure how else to think about it. It is the feeling that a—*one*—someone, is here, even when no one is in view. It is a sense of *presence* that the robot feels. The robot doesn't *know*. Andrew cannot discover a

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way of knowing. But the feeling is not some erratic wiring, or even the robot's developing imagination. It is either a madness or it is a real presence.

And I am not crazy.

Which is a sure sign of madness. Andrew laughs his dry laugh.

Yet again, because of Victor Wu, because Andrew has come to trust the robot in all other things, he takes the robot seriously. In the few spare moments he has for experiments not directly related to the mantle-goal, Andrew and a graduate student make coding modifications to the robot's language software.

We're wiring perfect pitch into you, the graduate student, Samantha, says, to go along with your ear for good music. Samantha explains more of what she is doing, but the robot does not follow. Samantha understands the robot's mechanism as a surgeon might a human being's. As she works at an internal keyboard, she tells the robot of her own past, but again the robot has trouble understanding.

I grew up in virtual. I was practically born on the Internet. But by god I'm going to die in the forest, Samantha tells the robot. That's why most of us are out here with Dr. Hutton, she says.

There is only a trace of a smile on Andrew's face, but the robot knows him well enough now to see it.

Well this sure as hell ain't virtual, he says.

>>>>>>>>>>>

Laramie returns. She has not called Andrew. One Saturday the humvee crackles down the dirt and gravel road to the living area, and Laramie has come back. Andrew is away, at a meeting, and at first the robot is flustered and bewildered as to what to do. The robot has been reading, with a mind still half in the book.

Laramie pulls out her camera and some sound equipment and comes to the entrance to the living cavern. The robot, in the mu, meets her, and invites her inside. That much the robot is able to manage.

I'm sorry I didn't clear my visit with Andrew first but you said it would be all right.

It is all right.

I thought it would be. Do you mind if I record this?

No. I keep something like a journal myself. Would you care for some tea? Andrew bought some herbal tea after your last visit.

The robot thinks that the words sound stiff and overly formal, but Laramie says yes, and settles down at the interior table and sets up her equipment. There is a kettle on the hot plate, and the robot turns on the burner. Laramie takes a microphone from a vinyl case and unwinds its cording. The robot watches her, watches Laramie's hands move. Her fingers are as long as Maude's.

The robot suddenly realizes there may be no water in the kettle. But

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there is steam rising from around the lid—which means that there is water and that the water is hot enough to drink.

Laramie. May I call you Laramie?

Sure. Of course.

I cannot make your tea.

What? That's fine, then. I'm fine.

No. I mean that it's difficult for me to get the mu inside.

I don't understand.

I'm sorry. I mean the mobile unit. If you don't mind, you can get a cup and a tea bag out of the cupboard. The water is ready.

Laramie sets the microphone down, gazes around the room.

Is it in that cupboard?

Yes. Bottom shelf.

Laramie gets the cup and tea, then pours some water. Andrew is a careful pourer, but Laramie spatters droplets on the hot burner and they sizzle as they evaporate. She takes her tea back to the table. She jacks the microphone into a small tape recorder that is black with white letters that say Sony. From the recorder, she runs a lead to the Scoopic sixteen millimeter camera.

Where's that adapter? Oh. There. I had this Scoopic souped up a little, by the way, since my father. Since I got it. Has a GOES chip. Uplinks and downlinks with the Sony. I could record you in Singapore, and not get a frame of drift. But I'm not a pro at this. My sound tech bugged out on me last week. That's one reason it's taken me a while to get back over here. He got scared after the riot. Let me voice slate and we'll be ready.

Laramie?

Hmm?

Are you safe? I mean, where you are staying in Port Townsend—is it guarded in any way?

No. I'm fine. It's the loggers and the Matties who want to kill each other.

They might mistake you for a logger. You spent a lot of time in the bush.

At this expression, which is Victor Wu's, Laramie looks up. She finds nothing to look at, and turns her gaze back down, to the Sony.

I'm safe as can be expected.

Be careful, Laramie.

You're not my father.

I know that. But I would be pleased if you would be careful.

All right. I'll keep that in mind. Laramide productions-skykomish-eight-three-fourteen-roll-eleven. Robot, have you decided yet on a name?

Not yet.

She raises the camera, looks around through the viewfinder, and finally chooses a bank of monitors to aim it at.

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What do you think about?

Pardon?

What do you think about, robot?

I'm not HAL, Laramie.

What?

You know what I mean. You saw that movie many times. Your question sounds snide to me, as if it were a forgone conclusion that I don't *really* think. You don't just throw a question like that at me. It would be better to lead up to it. I don't have to justify my existence to anyone, and I don't particularly like to fawn on human beings. I feel that it is degrading to them.

You sound like Andrew is what you sound like.

That's quite possible. I spend a lot of time with him.

Well. So. Maybe that wasn't the best first question. Maybe you could tell me about your work.

The robot explains the dig, and what it might mean to science.

But I don't know a great deal about that. At least, I don't think about it often.

What really matters to you, then?

The digging. The getting there. The way the rock is. All igneous and thick, but there are different regions.

Like swimming in a lake.

Yes. I imagine you're right. It's very hard to talk about, the feeling I have.

What feeling?

That. I don't know. It is hard to say. I could. I could take you there.

Take me where? Down there?

Yes. Down there.

Now? You mean now?

No. I'd have to talk to Andrew about doing so.

Of course. Do you think he'd let me?

I would like to show it to you, what we're doing. I think that if I wanted to take you down, he would let you.

Laramie sets the camera down on the table, beside her herb tea, which is untouched and cooling.

Ask him, robot. Please ask him.

>>>>>>>>>>>

On Monday, protesters arrive at the dig. Andrew had been expecting them eventually, but the number surprises him. They arrive by bus and gather at the opening to the mohole, not at the living space entrance.

Gurney must have told them which was which. Andrew growls the words, and the robot can barely understand them.

There are forty protesters. At first, they mill around, neither saying nor doing much, but waiting. Finally, a sky-blue Land Rover comes down

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the dirt road. On its side are the words: KHARMA CORPS, SKYKOMISH PROTECTORATE. Two women and a man get out and the protesters gather round them. From the back of the Land Rover, one of the women hands out placards that have on them symbols. The peace sign. A silhouetted nuclear reactor with a red slashed circle about it. A totem of the Earth Mother from Stilaguamish Northwest Indian heritage, and now the symbol for the Skykomish Protectorate. One sign has a picture of a dam, split in half as if by an earthquake, and fish swimming freely through the crack. The other woman gives those who want it steaming cups of hot, black coffee or green tea.

The robot waits in the mu at the entrance to the living area, and Andrew walks over to speak with the protesters. The man who drove the Land Rover steps forward to meet him. The robot can hear what is said, but Andrew's body blocks the view of the man with whom Andrew is speaking.

Andrew Hutton. I work here.

I'm with the Protectorate. My name is Neilsen Birchbranch.

How are you with the Protectorate?

I'm an aid to Mother Agatha. I sit on the Healing Circle Interlocking Director's Conclave. I'm the chairperson, in fact.

Secret police.

What was that?

Neilsen, was it?

Let's keep it formal, Dr. Hutton, if you wouldn't mind.

All right. Mr. Birchbranch, what are you doing on my work site?

The demonstration is sanctioned. Mother Agatha herself signed the permit. Freedom of speech is guaranteed in the Protectorate Charter.

I'm not against freedom of speech. We have work to do today.

It is against the law to cross a protest line. That's infringement on freedom of speech and that's in the Charter as well. These people feel that the work you're doing is violating the sanctity of the earth. They feel that you are, in a way, raping the mother of us all. Do you know where your digging machine comes from?

Yes. From a defunct mining operation that the Matties had a hand in putting out of business.

Precisely. It is a symbol. This hole is a symbol. Dr. Hutton, can't you see how it's taken, what you're doing?

I can see how some take it. I can see the politics of it, clearly enough.

It is a new politics, Dr. Hutton. The politics of care. I'm not sure you do see that, or else you wouldn't be an opponent.

Maybe. Maybe I show my care in other ways.

What other ways?

Non-political ways. I'm not sure *you* can see what *I'm* talking about, Mr. Birchbranch.

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So. You persist, regardless of the consequences, because you want to see what's down there.

That's fair to say. Yes. I want to see what's down there.

The values of western science. The same values that gave us thermonuclear war and the genocide of every other species besides man.

Well, there's also woman. That's a separate species.

Pardon?

It's a joke, Mr. Birchbranch. Maybe not a very good one.

No. Not a very good one at all.

So these are the things you're going to say to the television.

Not me as an individual. These people have chosen me to voice *their* concern and care.

Chosen you?

I'm the personal representative of Mother Agatha. You must believe that they've chosen her?

Then are you saying my people can't work? There are Matties. Children of the Matriarch. They work here. This is their livelihood.

They've all agreed to stay home today, I believe you'll find.

They're striking against me?

It's a support measure.

I see.

Good then. There will be a television truck coming later, and possibly a helicopter from News Five in Seattle. If you'd like, you can route any calls from journalists to me.

That won't be necessary.

The robot hears bitterness in Andrew's voice. Perhaps the other man can also.

So. Thank you for your cooperation, Dr. Hutton.

Yes. What's the time period on the permit? I spoke with Karlie Waterfall and she said that if it came through, it would be a week at most.

Sister Waterfall has voluntarily resigned from the Science Interweft to devote more time to her work at the Dungeoness Spit Weather Observation Station.

When did that. Never mind. Christ, she was the only one with any sense on that damn committee.

There isn't a set period on the permit. There's no time limit on freedom of speech.

Well, get on with it, then, I suppose.

We intend to, Dr. Hutton. One other thing. We have a restraining order against the use of any machinery in the area for the day. I understand that you have a robot.

That's right.

Please power the robot down for the day, if you don't mind.

I do mind.

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Dr. Hutton, this is entirely legal.

The robot will remain in my quarters. The robot *is* my quarters.

It is highly irregular. I can't answer for the consequences if you don't comply with the order.

Goodbye, Mr. Birchbranch. Have a nice protest.

Andrew turns to leave, and in so doing, steps out from in front of the man. The robot's optics zoom in and pull focus, which the robot experiences in the same way as a human might the dilation of the eyes. At first the robot cannot believe what those optics report, and zooms out and back in again, as rubbing the eyes is to humans. No mistake.

Neilsen Birchbranch is a tall man, with lanky arms and legs. His face is thin and hard, gaunt, with muscles like small twisting roots cabling his mandible to his temple. The robot saw him last in the field, before Andrew came. Neilsen Birchbranch is the same man who killed the other on the steps of the dais in the field. Neilsen Birchbranch is the man who pulled the trigger of the gun and shot the other man dead.

Andrew steps back into the living area and the robot, in the mu, draws back noiselessly into the darkness.

Andrew calls the graduate students and the technicians who are from logger families, explaining to them one after another not to bother coming to work for a while, and to check back in over the next few mornings. When Andrew is done, the robot tells him about Neilsen Birchbranch.

Are you certain?

I'm sure of it.

I can't think of what to do about it.

Neither can I. I don't want to be torn apart.

We won't let that happen.

Then there isn't anything.

No.

Be wary.

I'm already wary.

>>>>>>>>>>>

The first of the autumn rains begin. Though the digging area is partially in the rain shadow of the eastern mountains, it is still within the great upturns of basalt that ring the interior mountains, and mark the true edge of a swath of relative dryness that runs along the Hood Canal in a great horseshoe up even to Sequim and the Dungeoness Spit, so that there are not two hundred inches of rain, such as fall on the Ho, or the Quinault watershed, but there is more than a hundred—millions and millions of gallons of rain and snow—that will fall here during the autumn, winter and spring, and many days throughout the summer.

Because of the great rains, there are great trees. And because of the great trees, the loggers came. And because most of the other trees were

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cut, the lovers of trees came. And the rain falls on Mattie and logger alike, and it falls and falls and falls.

The Matties have set up folding tables and many have brought chairs and big umbrellas. The tables and chairs of the Matties line the road for a hundred yards, and whenever a network reporter arrives, the tables and chairs are put hastily away and the Matties stand and grow agitated.

On the eleventh day of the protest, Laramie returns. Laramie has not coordinated her arrival with the Matties, and so comes upon them unawares with her camera. The Matties smile into the lens. After she begins asking questions, a delegation approaches her and asks her to wait, that the spokesperson is on his way, and he will give her the best answers. No one will speak with Laramie after this, and Andrew invites her into the living area to wait for the arrival of the spokesperson.

The robot has been watching, just inside the entrance to the living area, as the robot has been watching for days now. Only at night, when the protesters go back to their bus and the Land Rover carries away the tables and chairs, does the robot go out into the open.

This can't go on, Andrew says. I can't stop paying wages. I'm *required* to pay wages to my Mattie techs, but I would anyway, and all the others. No digging, and all the grant money flowing away.

Sorry to hear that.

Laramie uses the Scoopic to make various shots of the robot's interior. Andrew says nothing, but smiles thinly. She has the Sony slung around her shoulder and, the robot notices, is recording her conversation with Andrew.

Did the robot discuss with you me going down in the hole?

In the dig. It's a spiral, like a slinky, more or less. Yes. Yes, you can come as soon as we're allowed to go back down there.

That's great. Will I be able to film any of what it looks like?

Hmm. Maybe we can set something up. There's a small observation port on the service wagon. We'll have to turn off the fusion on the dray first, or you won't be filming for very long, I don't think.

Excellent. I'm really tired of protests and officials who don't call themselves officials, and all those squalid houses where all the loggers moved out at Aberdeen. There's been a lot of trouble there.

I heard about it.

We didn't used to call them loggers much.

That because everybody was one.

We used to drive through Aberdeen when we wanted to get to the sea.

And up the coast to La Push.

Those black beaches across the river. I used to know why the rocks were so black.

Basalt skree that a glacier brought down that valley last ice age. That's what happened to the back half of the horseshoe. That's where it went.

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Yeah. Basalt tumble. We slept there all night one night in August. You thought Papa would be pissed, but he didn't even notice, of course. He just asked me about the rocks I saw and told me about the Big Fist of sediment lifting up the sea floor and breaking it and all that. Papa. You and I made love that night, didn't we, Andrew?

Yes, Laramie. You know we did.

I know it.

Then.

Yep. The robot's listening, isn't it.

I'm listening, Laramie, if you don't mind.

No.

You know I'm not Victor Wu. I'm not shocked. I am rather surprised, however.

What do you mean?

About Andrew. I've never known him when he was in love with a woman.

Andrew's crackling chuckle. Not for a while, he says.

There was that chemist, after me. You wrote me about her. That was your last letter.

You never wrote me back.

I was pissed.

I figured you would be. Still, you couldn't have been pissed for five years.

I couldn't?

We broke up the next January.

Sorry to hear that.

She lacked imagination. They all lacked imagination.

Jesus, you're clinical.

I know what I like.

What do you like?

I can't have what I like.

Why not?

Because she has to live in Los Angeles, and I'm not particularly interested in the geology of Southern California.

The robot sees that Laramie's fine white skin has taken on a flush.

And it's as simple as that, she says.

Why make it complicated?

Maybe it *is* complicated. Maybe you're simplistic.

Will you turn that damn camera off?

No.

Well. There you have it.

>>>>>>>>>>>

On the fourteenth day, the protesters do not arrive in the morning. There is no explanation, and no hint given to Andrew as to when they

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will return. Once again, the robot digs. Andrew puts aside several tests and side projects in order to dig faster and deeper. The robot is in the element that the metal of the rotor blades and the grip of the ceramic thread were made for—hard rock mining—and the robot presses hard, and the rock explodes and fuses as obsidian diamond glass to the walls behind the robot, and the tunnel approaches forty miles in depth.

No one has ever been this deep before.

The techs from logging families and the Mattie techs are barely speaking to one another, and the graduate students are uneasy and tense, afraid to take sides. Andrew holds the crew together by a silent and furious force of will. The robot does not want to let Andrew down, and digs the harder.

Samantha has made the last of the modifications to the robot's linguistics, and puts the new code on-line. The robot immediately feels the difference. The presence, the otherness, grows stronger and stronger with every hour, until the robot is certain of it. But of *what,* there is no saying.

>>>>>>>>>>>

Two days of digging, and on the third, Laramie arrives in the early morning and prepares to descend with the crew. But before the work can begin for the day, Andrew receives a call telling him that proceedings are underway for a new permit of protest, and a long-term suspension of the dig. He drives to Forks, where the committee will meet in the afternoon. It is a rainy day, and the robot worries that Andrew may drive too fast on the slippery pavement. Still, there is plenty of time for him to make the meeting.

In Andrew's absence, the Matties and loggers fall to quarreling about duties, and the graduate student Andrew has left in charge cannot resolve the differences. After an hour of listening to the wrangling, even the robot can see that no work will be done this day. The robot asks permission to take Laramie down to the bottom of the dig, and the graduate student, in disgust at the situation, shrugs and goes back to refereeing the technicians' argument.

As Laramie and the robot are preparing to leave, Neilsen Birchbranch drives up in the Protectorate Land Rover. A light rain is falling, and the graduate student reluctantly admits him into the worksite's initial cavern, where the others are gathered. The robot—digger and mu—draws back into the darkness of the true entrance to the dig.

Let's go, Laramie says.

But I'm afraid of this man, the robot replies. He isn't a good man. I know that for a fact.

Then let's get out of here.

There may be trouble.

I need to speak with Hutton, Neilsen Birchbranch says to the graduate student. It is very important that I speak with him today.

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Take me down, please, robot. I may never get another chance.

The robot considers. As always, it is difficult to deny Laramie something she really wants with all her heart. And there is so much to show her. The robot has been thinking about showing the dig to Laramie for a long time. And the farther down they go, they farther they get from Neilsen Birchbranch's trouble.

We have a witness that places one of your machines at the scene of a crime, says Neilsen Birchbranch. A very serious crime.

Neilsen Birchbranch steps further into the cavern, gazes around. The robot slowly withdraws down the mohole. For all the digger's giant proportions, its movement is very quiet, and, the robot hopes, unnoticed.

Nothing but you can survive down there, can it, robot? Laramie says. How deep is it down there?

Forty-three miles.

He can't turn you off if you're forty miles deep. We'll stay down until Andrew comes back.

The first few miles of the descent are the most visually interesting, and, after reaching a depth at which unprotected humans cannot survive the heat, the robot moves at a fraction of the usual pace. There are areas where the glass spray on the walls has myriad hues taken from all the minerals that were melted together in the slurry around the nuclear pile, then spewed out to line the tunnel. The walls are smooth only at first glance, but really a series of overlapping sheets, one imperfectly flowing atop the other, as sheets of ice form over a spring in winter. The robot directs lights to some of the more interesting formations, and they glow with the brilliance and prismatic hue of stained glass.

I didn't think I'd get anything this good, Laramie says. This is wonderful. The colors. God I'm glad I went with color.

Deeper, and the walls become milky white. The granite behind glows darkly, three yards under the glassine plaster.

Twenty miles. Thirty.

Only basalt in the slurry now, and the walls are colorless. Yet they have the shape of the rock many feet behind them, and so they catch the light with effulgent glimmer.

Clear and clean.

Laramie may be speaking to herself; the robot cannot tell.

They pass through a region where magma pools against the walls and ceilings in places, held back by the diamond-like coating. The pressure is so great that the magma glows with a blue and white intensity. The tunnel sparkles of its own accord, and the robot must dim the viewport to keep from blinding Laramie.

Like the sky behind the sky.

The robot says nothing. Laramie is happy, the robot thinks. Little Bulge likes it down here.

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They have been some hours in the descent, and Laramie is running low on film, but is very, very happy. Near to the bottom. Now to wait for Andrew. Very quiet. The robot has never been this deep before without digging and working. The robot has never sat idle and silent at the bottom of the mohole.

Hello.

>>>>>>>>>>>

For a moment, the robot thinks Laramie has spoken. But this is not Laramie's voice. And it comes from *outside*. The voice comes from outside the robot, from the very rocks themselves.

The sense of the presence, the other that the robot has been feeling for these long weeks, is very strong. Very strong.

Again the voice that isn't a voice, the vibration that isn't a vibration. It is like a distant, low whisper. Like a voice barely heard over a lake at morning. No wonder I never made it out before, the robot thinks.

Hello, comes the voice.

Who are you?

I'm me.

What are you doing down here?

I *am* down here. Who are you?

I'm. I don't have a name yet.

Neither do I. Not one that I like.

Who are you?

Me. I told you.

What is it, robot? Laramie speaking.

Something strange.

What?

I don't. Wait for a moment. A moment.

All right.

The robot calls again. The robot is spinning its cutting rotors at low speed, and it is the whisk and ding of the digger's rotors that is doing the talking. Hello?

Hello. Are you one of those trees?

Trees?

The trees barely get here, and then they start *moving*. Are you one of those moving trees?

I don't. Yes. Maybe.

I thought you *might* talk, but it's so cold up there, it takes ages to say anything. Down here things go a lot faster.

Are you. What are you?

I told you. I'm me.

The rocks?

Nope.

The magma?

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Nope. Guess again.

Where are you? Show yourself to me.

I am.

Then I've guessed. You're the whole planet. You're the earth.

Laughter. Definitely laughter. I'm not either. I'm just here. Just around here.

Where's here?

Between the big ocean and the little ocean.

The Olympic Peninsula?

Is that what you call it? That's a hard word for a name.

Skykomish.

That's better. Listen, I have a lot of things I want to ask you. We all do.

There is an explosion.

At first the robot thinks that a wall has blown out near the region of the magma pools. This will be dangerous, but it should be possible to reinforce long enough to get through. It may mean trouble for the dig, though. Now there will be more funding. The Matties will allow it to go ahead. Even the robot can see that the politics have changed.

Everything has changed.

There is another explosion. A series of explosions.

Robot?

Laramie. I. I have so much to tell you.

What is that shaking? I'm scared down here. Do you think we can go up now?

Hello. Tree? Are you still there?

Even with the tremors—there are huge rumblings and cracklings all about—the robot is attuned to the voice, the presence, and can still hear its words.

I really need to talk to you.

Papa, do you think we can go up now?

>>>>>>>>>>>

The pressure wave lifts the robot—impossibly tilts the robot—over and over—shatter of the walls as diamonds shatter like the shrapnel of stars and the rocks behind—tumble and light, light from the glow of the give, the sudden release of tension—the bulk melt of the undisclosed—sideways, but what is sideways?—tumble and tumble—skree within thin melt moving, turning, curling like a wave and the robot on the curl, under the curl, hurled down down down over over down dark dark.

Dark.

Dark and buried.

Find my daughter.

The engineers have built one hell of a machine.

Find my daughter.

The robot powers back up. The robot begins, blindly, to dig. It is only

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by sheer luck that the robot comes upon the service wagon. The robot melts and compacts a space, creates an opening, temporary, dangerously temporary. Finds the powerhitch to the wagon and plugs in.

Turns on the lights and air conditioning inside the wagon. The video cameras inside.

Laramie is twisted against a control console. Her neck is impossibly twisted. She is dead.

No. She isn't. Can't be. She is.

What? Within the curve of her stomach, holding it to shelter, the Scoopic. But the latch has sprung and sixteen millimeter film is spilled out and tangled about her legs.

No. Laramie. Little Bulge.

Hello?

The robot screams. The robot howls in anguish. Forty miles deep, the robot cries out a soul's agony into the rock. A living soul mourning a dead one.

Stop that.

The other, the presence. The robot does not care. Past caring.

You're scaring me.

Past.

You're scaring me.

Grind of rotors, ineffectual grind. How can you live? How can humans live when this happens? Ah, no. You can't live. You cannot. You can, and it is worse. Worse than not living. No no no no.

Stop it.

And something happens. Something very large—gives. More. Faults, faults everywhere. Settle, rise, settle. Faults like a wizened crust, like a mind falling into shards of fear. Faults and settle, rise and settle. Rise.

No. I.

But there is a way. There is a weakness revealed, and there is a way. Not wide enough, not yet. But a way to go. A way to take her home. Take her home to Andrew. The robot begins to dig.

>>>>>>>>>>>

The robot digs. There is only the digging, the bite of blade and saw, the gather of lade and bale. Digging. Upward digging.

The way is made easier by the shaking, the constant, constant tremble of what the robot knows to be fear, incomprehension.

A child who has seen a grown-up's sorrow, and does not understand. A frightened child.

By the time the robot comes to this realization, it is too late. The robot is too high, and when called, the child does not answer. Or perhaps it is that the child needs time to calm, that it cannot answer. The robot calls again and again. Nothing. Nothing can be heard above the rumble of fear.

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Poor trembling Skykomish. The robot continues digging, drawing behind it the service wagon. Bringing Laramie to Andrew.

A day passes. Two. Rock. Stone. The roots of the mountains, and sediment, compressed to schist. The roots of the mountains and the robot slowly comes to its senses. Comprehends.

After a long moment of stillness—a minute, an hour? No reckoning in the utter depths, and the robot is not that kind of robot—after a long moment of reflection, the robot looses the service wagon.

Little Bulge, goodbye.

Up. Now. Up because the way is easier up than down, and that is the only reason.

After three days, the robot emerges from the ground. In a cove that the robot recognizes. On the Quinault watershed. Into a steady autumn rain.

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The robot wanders up the Quinault River. Every day rains, and no nights are clear. The forest is in gloom, and moss hangs wet and dark. Where the trail is not wide enough, the robot bends trees, trying not to break them, but uprooting many: Many trees have fallen, for there are earthquakes—waves and waves of them. Earthquakes the like of which have never been seen in the world. The robot cuts deadfall from its path with little effort and little thought. The digger's passage through the forest is like that of a hundred bears—not a path of destruction, but a marked and terrible path, nonetheless.

Where the Quinault turns against a great ridge, the robot fords, and continues upward, away from the trees. The robot crosses Low Divide during the first snow of the season. The sun is low, then gone behind the cloaked western ridges. For a time, the ground's rumblings still. All sound is muffled by the quiet snow. The twilight air is like silence about the robot.

Something has happened.

At the saddle of the divide, the robot pauses. The pass is unfamiliar. Something has happened inside. Victor Wu has gone away. Or Victor Wu has come fully to life. The two are the same.

Then am I a man?

What is my name?

Orpheus. Ha. A good one.

Old Orf up from Hades. I've read about you. And Euridice. I didn't understand. And now I do. Poems are pretty rocks that know things. You pull them from the earth. Some you leave behind.

Talking to myself.

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After a moment, the robot, Orf, grinds steadily on. He grinds steadily on.

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Down the valley of the Elwha, and north as the river flows and greatens. Earthquakes heave and slap, slap and heave. Sometimes a tree falls onto the digger, but Orf pays no mind. He is made of the stronger material, and they cannot harm him.

Down the valley of the Elwha, past the dam that the Matties have carefully removed, that would not have withstood the quakes if it were still there. The trail becomes a dirt road. The road buckled pavement. The robot follows the remains of the highway into what once was Port Angeles.

What will future geologists make of this? The town has become a skree, impossible to separate and reconfigure. Twists of metal gleams in the pilings by the light of undying fires. And amid the fire and rubble, figures move. Orf rolls into the city.

A man sits in a clear space, holds his knees to his chest, and stares. Orf stops well away from him.

I am looking for a man named Neilsen Birchbranch. Do you know where I can find him?

The man says nothing.

Do you know where I can find Neilsen Birchbranch? He works for the Protectorate.

The man says nothing, but begins to rock back and forth on his haunches.

I'm looking. Can you.

The man begins to moan.

Orf moves onward. At a point where the piles of rubble begin to be higher, a makeshift roadblock has been set up. Orf stops at it, and a group of men and women, all armed with rifles, come out of the declivities of the town skree.

Come out of there, an old man says. He points his gun at Orf.

There isn't anybody in here.

Come out, or we'll blow you to hell.

I've already been there.

Come on out of there.

I'm looking for a man named Neilsen Birchbranch. He works for the Protectorate.

Goddamn we will shoot you you goddamn Mattie.

Do you know where I can find him?

The old man spits on the ground.

Reckon he's with the others.

The others?

That's what I said.

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Where are they?

Out at the dump.

Where's the dump?

That way. The old man points with his gun. Now come out.

Orf turns and rolls away in the direction of the dump. Shots ring out. They ricochet off him and crackle against the rubble.

Five miles out of town, Orf finds the dump. There are bodies here; hundreds of bodies. Men, women, children. At first, he thinks they are the dead from the quakes, collected and brought here.

With the edge of a saw blade, Orf turns one of the bodies over. It is a woman. She has been shot in the head.

Most of the other bodies are people who have been shot. Or hacked up. Or had their necks broken with clubs.

The loggers have had their revenge.

And there among the bodies, Orf pauses. He has recognized one. It is the woman from the field, the speaker, Mother Agatha. It is her; there is no mistake. A small bullet hole is in the forehead of her peaceful face.

Orf rolls back to the city. It is night. He bursts through the roadblock without stopping. Shots, the flash of muzzles. It is all so much waste. Down lightless streets, and streets lit with fires, some deliberate, some not. Every half hour or so, another earthquake rumbles through, throwing rubble willy-nilly. There are often screams.

Orf comes upon a steady fire, well-maintained, and sees that it is surrounded by people—people in the blue and brown dress of Matties. It is a silent throng. Orf hangs back, listens.

Oh Mother Agatha Mother Goddess hear our prayer.

Hear our prayer.

We know we have done wrong. We have sinned against you. Hear our prayer.

Hear our prayer.

Hold back your wrath. We are unworthy and evil. This we know. We beg you even still. Hold back your wrath. Hear our prayer.

Hear our prayer.

Goddamn mother—

The report of a gun. Someone—man or woman, Orf cannot tell—crumples in the ring of the fire. Instead of fleeing, the others stand still.

Another shot. Another falls.

Hear our prayer.

No one moves.

Another shot. A man falls, groaning, grasping at his leg. No one moves. He writhes in the shadows of the fire, in the dust of the ruins. No one helps him.

The rifleman shoots no more. The man writhes. The voice of the minister goes up to his goddess and the people respond mechanically.

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Like robots are supposed to, Orf thinks. The man ceases his writhing. There is nothing to do. Orf rolls on quietly through the night, out of the city and east. The going is easy over the broken highway. In two hours, Orf is in what was Port Townsend.

There is no rubble here, no ruins. The sea has washed it away. No bodies. No trees. Only desolation, bare-wiped desolation. He rolls down to where the docks had been, and looks out upon the lapping waters of the Strait of Juan de Fuca.

Then the slap of an earthquake, and Orf discovers the reason for the missing city. The slap runs its way down to the sea and is perfectly mirrored by the other side of the Strait. Reflected back, a tsunami. Rolls over the land. Nothing left to take. Almost enough to suck in a digging robot. Orf must back pedal with his threads, dig in to keep from being pulled forward by the suck of the water as it retreats to the sea.

Everyone is drowned here.

Orf will not find Neilsen Birchbranch by looking in the cities. He heads to the southwest now, back to the center of the mountains.

Into the forest. Orf wanders without aim. A day. Many days. Once, he remembers the mu, tries to go out of himself and find it. The uplink doesn't work; there is only static on a clear channel. Have all the satellites fallen from the sky? He wanders on, a giant among the gigantic trees.

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Across one divide. Down a valley. Finally back to the digsite. All is devastation here, a tumble of stone. Not a sign of anyone. The living area is caved in. Orf digs, but cannot locate the mu. All he finds is a twisted piece of red metal—the remains of Laramie's hum-vee. Nothing else. No reason to stay.

Across another divide. Another valley. No longer caring to keep track. Stopping to look at rocks, or a peculiar bend in a river. The accumulation of snow.

One day, the earthquakes stop.

Quiet child. Hush now. You've seen too much for young eyes. Hush and be quiet for a while and take your rest.

Winter, it must be. Orf coming over Snow Dome, down the Blue Glacier and into the valley of the Ho, where the biggest of the big trees are. Darkness earlier and earlier. In these towering woods, at these high latitudes, winter days are a perpetual twilight. Orf alongside the Ho. Its water opaque with outwash sludge, the heart of Mt. Olympus, washing away to the sea.

Then away from the river, deeper into the rain forest. As deep and as wild as it gets, many miles from roads. If there are roads anymore.

One hushed afternoon—or perhaps early evening, they are blend—a climbing rope, dangling from a tree. Movement to the left.

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Another rope. Many ropes falling from the trees like rain that stays suspended. And down the ropes men and women slide like spiders. Orf is surrounded. They are dressed in tattered suits of green. Silently, they gather round the digger until Orf cannot move for fear of crushing one of them.

Men and women. Some have rifles slung across their backs. Two women carry children in the same manner, and the young ones are utterly, utterly quiet.

All right. Orf has not heard a voice in weeks, and his own, arising from his exterior speakers, startles him. What is it you want?

One of the men in green steps forward.

Wait, he says.

Orf waits with the silent people for he knows not what. And then, there is a movement in the undergrowth of vine maple. From around a low slope and over some deadfall, the mu appears. It moves clumsily. Whoever is at the controls doesn't know what he's doing, Orf thinks.

The mu scampers up to the digger and stops.

Andrew walks over the slope.

He steps lightly along the deadfall on the forest floor and comes to stand beside the mu. In his hand is a metal box with an antenna extended from it.

Do you want this thing back?

They are silent for a while. It is not a strained silence, but is right. Orf speaks first.

Laramie is dead. I couldn't save her.

I know.

What happened at the dig?

I'm not sure. I've only got second-hand information, but I think that the secret policeman coerced Gurney into sabotaging the place. I think he threatened to hurt his family. It was a bomb. A big bomb. Probably chemical. Everybody died, not just. Not just Laramie.

So. I'm sorry. So. Who are these people?

Andrew laughs. It has been so, so long. That dry laugh. A harsh, fair laugh, out of place before, perhaps, but suited now to these harsh times.

These are Rangers of the United States Park Service. They live here. In the tops of the old growth. We guard the forest.

We?

Somehow or another, I've become the head ranger.

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Winter, and the rangers bundle in the nooks of their firs and hemlocks, their spruces and cedars. The digger must remain on the ground, but, using the mu, Orf can venture up to their village in the trees.

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In the highest tree, in the upper branches, Andrew has slung his hammock. Orf and he spend many days there, talking, discussing how things were, how they might be. Politics have shifted in the outside world, and Andrew is part of them now, seeking a place for his band of outcast civil servants that has become a family, and then a tribe.

The rangers hold the center of the Peninsula against Mattie and logger, or against the remains of them. There is to be no clearing of the forest, and no worship of it, either, but a conservation and guard, a stewardship and a waiting. Rangers defend the woods. They take no permanent mates and have no children. The young ones Orf had seen before were stolen children, taken from Matties and loggers. Ranger women in their constant vigilance could not afford to be pregnant, and if they did, took fungal herbs that induced abortion. All must be given to the watching.

Winter, spring. Another year. Years. The fortunes of the rangers ebb and flow, but always the forests are held. Orf comes to their aid often with the mu and, when the situation is very dire, with the whirling blades of the digger.

Andrew hopes to open the mohole back up one day, when all is secure, to continue the dig—especially in light of Orf's discovery of . . . whatever it is that is down there. But now there are politics and fighting, and that time never comes. Andrew was right, and tribes, strange tribes, arise in the outside world. Governments crumble and disappear. Soon it is rangers alone who keep a kind of learning and history alive, and who come to preserve more than trees.

In any case, Andrew's heart seems to have gone out of the project. Somewhere below his love is buried, deeper than any man's has ever been buried before. If he goes back down, he may come upon her yet. Andrew is a brave man, Orf knows. But maybe not that brave.

And always Orf hears rumors of a bad man and killer who appears here and there, sometimes in the service of the Matties, sometimes working for logger clans. But Orf never finds Neilsen Birchbranch. Never even discovers his real name. And a time comes when the rumors cease.

Many years. Andrew grows old. Orf does not grow old. The digger's nuclear fusion pile will not run down. Only a malfunction could keep Orf from living a thousand years. Perhaps a thousand more.

One morning, in the mu, Orf climbs to Andrew's hammock and finds that Andrew has died in the night.

Gently, Orf envelops the man in the mu's arms; gently, he carries the body down from the trees. And walks through the forest. And crosses a divide. And another. To the valley of the Elwha. And up the Lillian River, to a basalt stela that, curiously, has no foramens in its make-up. That speaks of deep things, from far under the earth. That this land—strange peninsula between two salt waters—may be the place to dig and find what those things are.

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At its base, Orf buries his friend, Andrew Hutton.

And then, Orf—digger and mu—returns to the long-abandoned worksite. Orf clears the rocky entrance, finds the old passage. Orf digs down into the earth, and closes the path behind him.

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In the heart of the great horseshoe twist of the Olympic Peninsula, in the heart of the mountains themselves, there lives a monster, a giant, who some say is also a god. A ranger, hunting in some hidden dale, or along the banks of a nameless rivulet flowing from the snow's spring runoff, will feel the presence of another, watching. The ranger will turn, and catch—what?—the flash of tarnished metal, the glint of wan sun off a glassy eye? Then the spirit, the presence, will be gone from the ranger's senses, and he will question whether he felt anything at all. Such sightings happen only once or twice in a fortnight of years.

But there is a rock, black and tall, in the deepest, oldest wood, up a secret tributary of the Elwha River, where young rangers, seeking their visions, will deliberately go. Some do not return from that high valley. Others come back reporting a strange and wonderful thing: On a particular night in October, when the moon is new and all the land is shrouded, they say the monster emerges from a hole in the mountains—but never the same hole—and closes the way behind. The monster travels to the rock on the Lillian.

The earth rumbles like distant thunder, and trees are gently bent out of the monster's way as if they were thin branches. And at that rock on the Lillian River, the monster stays for a time, shining darkly under the stars. The monster stays and is utterly silent. The reasons why are lost to legend, but at that time young rangers with strong and empty hearts are given waking dreams and prophesies to fill them.

Then, not long before sunrise, the monster moves, pivots on its great bulk, and returns from whence it came. There are those who follow, who are called to track the monster back to its lair. These are seldom the strongest or the bravest, and they are not particularly missed. Some say the monster eats them or tortures them in fires of liquid stone. But others say that the monster leads them to a new land, wider and deeper than any humans can conceive, under the mountain, that the earth is bigger on the inside than on the outside. No one knows. No one knows, because they do not return to tell the tale, and the world falls further into ruin, and the monster—or god—no longer speaks. ●

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ON BOOKS

Peter Heck

THE MEMORY CATHEDRAL: A SECRET HISTORY OF LEONARDO DA VINCI

by Jack Dann
Bantam, $22.95 (hc)

The Memory Cathedral is an alternate history based on the life of Leonardo da Vinci. The title comes from a Renaissance technique for enhancing one's memory by using the mental image of a large building in which each feature of the architecture, decoration, and furniture is used to tag a fact or experience one wants to recall. As Jack Dann's first new novel in over a decade, it ought to be an event—and it is.

The prologue finds an aging Leonardo living in France, apparently on the verge of death, mentally exploring the elaborate imaginary cathedral he uses to store the experiences of a lifetime. There are hints that perhaps he is already dead, and there are enigmatic glimpses of figures from the past. Then Leonardo walks out the doors of his memory cathedral, and finds himself again in Florence, in the first flush of his youth. Dann treats us to a rich sensual portrayal of the city, which is in many ways as alien as many of the otherworldly scenarios of science fiction.

Florence is a hotbed of artistic activity, and young Leonardo has already attracted attention as one of the leading young talents, gaining important commissions and the patronage of some of the city's most powerful men, including Lorenzo di Medici himself. But the city is also in a constant turmoil of political conflict, with open warfare between factions on the streets, and treacherous consequences to even the most unlikely acts. While he is adept at making friends and gaining the support of the rich and influential, Leonardo also makes enemies too easily—and he is too arrogant to realize that he cannot win all his battles.

Meanwhile, Leonardo is on the verge of one of his most important discoveries: a flying machine (actually a glider) that can carry a man aloft. A first attempt ends in a crash, although it gives him important clues for designing an improved version of the flyer—in particular the realization that most of his problems will be solved by adopting a fixed-wing design. But before he can perfect a working model, his enemies accuse him of sodomy—and even though the charges are dropped, he is persona non grata with many of his former patrons. His only way to escape the consequences is to leave the city.

At this point, Dann turns to investigate a fascinating sidelight of Leonardo's life, his (probably spuri-

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ous) claim that he served as an advisor to the Devatdar of Syria, a Muslim warlord who was his contemporary. Accompanied by his fellow artist Botticelli and a very young Niccolò Machiavelli, Leonardo goes to Syria, where he begins to build his arsenal of war machines and see them put to actual use in battle. Here, as in the sections in Florence, the alienness of the world Dann portrays is remarkable: a brutal, colorful, and thoroughly fascinating patch of Renaissance history that the textbooks only hint at. And since Leonardo is himself an outsider here, the strangeness is compounded. If there were not historical names attached to the characters and places, many readers would be ready to believe that the narrative took place on some other planet.

The "secret history" suggested by the title goes beyond the introduction of the oriental material. In one sense, it is encapsulated in the memory cathedral itself, a metaphor for the inner life that Leonardo has stored in his elaborate mnemonic structure and that no one else can know. We get a close look at this fascinating character—one whose real-life career contains the germs of many science fictional ideas—and even more of the society that he grew up in. Not surprisingly, Leonardo's flying machines take on metaphorical implications—which become especially complex as he sees them turned to war machines by the Devatdar. At the end, Leonardo discovers a sort of immortality inside his memory cathedral—an immortality of which Dann's novel is a sort of external manifestation.

Dann is one of the major SF talents of his generation, and it is a pleasure to see him coming back from his protracted absence with a book as strong as *The Memory Cathedral.* Highly recommended.

BRIGHTNESS REEF: BOOK ONE OF THE UPLIFT TRILOGY

by David Brin

Bantam Spectra, $22.95 (hc)

Brin returns to the universe of *Sundiver, Startide Rising* and *The Uplift War*—probably his three most popular novels—for the first of a projected trilogy. The new book is full of his patented blend of wildly diverse alien races, science fictional in-jokes, off-the-wall speculation, and well-paced adventure, all set against a complex historical background in which the human race is a comparative newcomer of extremely dubious credentials.

Brin's fictional universe is one with relatively easy FTL travel, a multiplicity of habitable planets, and a large number of technologically adept species. But the evolution of higher intelligence on its own is an event so rare that it is believed to have taken place only once. All the other races have been "Uplifted"—that is, bio-engineered by some more advanced race to the point where they can achieve technical civilization on their own. The mythical original technical race is no longer known, but the line of transmission is believed to be un-

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broken from one race to another through millions of years.

Humans are an apparent exception—although no thinking race really believes that humans actually evolved into civilized status without help from somewhere. Most likely, Earth was either an abandoned experiment of some rogue race, or a project whose subjects have outlived their creators, and forgotten their true origins. Even some humans appear to have accepted the galaxy-wide conviction that some other race Uplifted them; although the majority view on Earth seems to be that our race got where it is on its own initiative. This makes human beings an anomaly, a suspect race whose very existence challenges the preconceptions of all right-thinking beings elsewhere.

Brightness Reef is set on Jijo, a planet once home to an advanced race, the Buyur. Millennia ago, the Buyur decided to abandon the world, allowing it to grow fallow again and recover the ecological balance it had lost. To that end, the Buyur destroyed all traces of their civilization, and put the world under quarantine to prevent settlement by other space-going species. But half a dozen species—among them humans—have managed to sneak through the blockade, settling small illegal colonies on the surface of Jijo. If discovered, they are subject to annihilation—and so they have made preparations for the day when an alien ship touches down and places their entire way of life in peril.

Brin introduces Jijo from several points of view, not all of them human. We see the world through the eyes of Alvin, a young *hoon* who comes across as a bright schoolboy with an affinity for reading adventure fiction from Earth; of Asx, an elder *trakei*—one of a composite race, made up of independent ring-like segments that stack into a cone; of Sara, Lark, and Dwer, the three human children of a papermaker; and of Rety, a wild young refugee from a tribe on the fringes of civilization.

The arrival of the long-feared alien ship sets off the main events of the book. But the ship's crew—primarily human—seems uninterested in punishing the settlers for breaking the quarantine against settlement of Jijo. Instead, they seem intent on collecting specimens of local life; they are especially interested in certain life-forms that show potential for Uplift. Some of the settlers begin to suspect that their visitors are in fact pirates, here to raid the world for useful life-forms—and that once they have collected what they want, they will kill off all the witnesses to their piracy. At the same time, a large faction begins tearing down all evidence of permanent habitation, seeing the spaceship's landing as a sort of Last Judgment in which only those who have left no mark on the pristine planet will be judged truly innocent.

The inevitable result is an escalating war between those settlers who believe that their religious duty is to efface all evidence of

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their presence on the planet, those who feel that survival comes first, and those who decide to cast their lot with the aliens. While the conflict does not break down along species lines, it creates an opportunity for old resentments between the different races on Jijo to boil to the surface; in particular, some factions among the urs (centaur-like creatures with extreme sexual dimorphism) have long harbored grudges against the humans.

Brin builds the conflict slowly, with plenty of side glances at the complex society and ecology of Jijo. Alvin and his friends embark on a typical hare-brained teenage adventure—and suddenly discover that their project has the support of important grownups. Dwer brings Rety to civilized parts, where she turns out to be a shameless opportunist, while he goes off to locate her tribe and convince it to abandon its frontier settlement. And Asx finds itself on the front line, first of the negotiations with the aliens, then of the conflict that arises between them and the local population.

Brin effectively juggles all these plot-lines, telling the story in an elliptical fashion that resembles putting together a world-sized jigsaw puzzle. It is not hard to extrapolate some of his themes into comments on issues our own society faces: the religious resistance to Darwin, the tension between development and conservation, the lingering ethnic conflicts underlying society. But since we see all through the eyes of his characters, we are left to infer our own answers to the implied questions.

As the first of a trilogy, the book can't be expected to resolve all its plot-lines, let alone its hints at larger matters being worked out off-planet. Brin ends this volume with enough tension to make readers want to see the next installment (as if anyone who's read this far wouldn't want to), and enough of the initial questions answered to make a satisfactory stopping place. A very interesting beginning to what should be a major work by the time the last brick is in place.

OATHS AND MIRACLES

by Nancy Kress
Forge, $22.95 (hc)

Kress takes a flier at genre-bending in this well-paced thriller based on a biotechnical breakthrough that turns out to be a mob-sponsored conspiracy. While the scientific extrapolations are as rigorous (and as credibly presented) as anything in SF, the setting is unquestionably here and now—the America we all live in, although most of us don't see all the details that Kress presents here.

Kress starts building up momentum from the first scene—onstage at a Las Vegas show, where one of the dancers is clearly in trouble. We quickly learn that her boyfriend, a small-time mobster, has been killed; before she herself is summarily eliminated, she passes on a cryptic phrase, presumably in Italian, to one of her fellow dancers: *Cadoc. Verico. Cadaveri-*

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co. Her friend is so frightened by the events that she returns immediately to her staid midwestern home and tries to cut off all ties to her brief fling with the glitzy, dangerous world of show biz. But not before she is questioned by an FBI agent, Robert Cavanaugh, who senses that she is lying about how much her friend told her, but has no idea how to find out the truth.

Coincidentally, Cavanaugh is about to be assigned to a case that involves a high-tech company, Verico, that appears to be a mob front. At the same time, a prominent microbiologist, Ben Kozinski, has been offered a position as head of Verico. His wife Judy tries to dissuade him, believing that his commitment to real research will suffer; but the half-million dollar salary is a huge inducement. Then, after a visit to the company headquarters, Kozinski is murdered—just as the FBI was about to question him about his interest in the company. We learn from his wife that he had gone for the interview, then abruptly changed his mind about taking the job offer.

Meanwhile, we have met another key character: Wendell Botts, a reforming alcoholic who is also a former member of a religious cult that maintains a heavily guarded camp in upstate New York. Botts's estranged wife and children remain inside the camp, still true believers. We learn that the cult practices animal sacrifice; that the camp's security has been substantially beefed up since Botts's departure; and that Botts strongly suspects the Elders of secret human sacrifice. We also learn that the cult is devoted to a St. Cadoc; two of the links to the dead dancer's cryptic phrase are now in place, although their meaning and relationship are still obscure.

Kress gradually builds from these hints, alternating between the viewpoints of Cavanaugh, Botts, and Judy Kozinski (who was a science journalist before marrying). Cavanaugh's investigation keeps foundering on the fact that nobody can come up with a reason why Verico might be of use to the mob. Botts, despite his former membership in the cult, manages to turn up nothing to support his suspicions; he comes across as too much the paranoid loser to gather any allies. Judy, for her part, is convinced that Ben's sudden change of mind was somehow responsible for his death; but her attempts to learn about Verico (talking to her husband's scientific colleagues and to the other woman in his life) get no farther than the FBI's.

But while the investigations are stalled, Kress gradually builds up her three main characters, filling in their histories and personalities and environments in detail. Cavanaugh's marriage has fallen apart, though he attempts to keep alive the relationship with a barrage of witty cartoons, news clippings, and jokes aimed at his ex-wife. (She responds with a restraining order against him.) Judy Kozinski's scientific training has put her at odds with her father, a devout Catholic who is compiling a new *Lives of the*

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Saints. Botts comes from a violent background; a stint in the Marines has toughened him, and he is a borderline criminal at best—but trying desperately to reform enough to convince the court to give him custody of his two small children. All three are survivors of marriages gone desperately wrong—a link that ties their stories together as effectively as their disparate roles in the Verico investigation.

Eventually, the reader (and the FBI man) begins to piece together the full story of Verico—what it is, and how it fits into the underworld's plans. Kress juggles the scientific elements with enough conviction to sell the premise, and keeps the reader in the dark enough to sustain the building suspense. The body count keeps building, too—as in the best thrillers, nobody is ever really *safe* from the sudden intrusions of evil and violence into their world. The book has the paranoid intensity of Ludlum at his best—but with the sharp prose and strong characterization Kress has always given her readers. This one would make a great movie. Let's hope somebody in Hollywood is smart enough to grab it—and to resist the temptation to "improve" it. It's a damn fine book as it stands.

THE TWO GEORGES

by Richard Dreyfuss & Harry Turtledove
Tor, $23.95

Turtledove is rapidly becoming the most visible practitioner of alternate history, which has been the fastest-growing subgenre in recent SF. Here he teams up with a celebrity co-author, and a reader might be pardoned for expecting the results to be a cut below Turtledove's usual level, high as it is. But this fine novel, set in a 1996 in which the American Revolution never took place, finds Turtledove at the top of his game. And to judge by comments Turtledove has made, Dreyfuss's contribution was far more substantial than what a cynic might expect from a celebrity not known as an author in his own right.

The title of the book refers to a celebrated (in the book's version of history) painting by Gainsborough, illustrating the meeting of George Washington and George III in which England and the American colonies came to an agreement that prevented the Revolution. The painting is an emblem as important as the Statue of Liberty or Lincoln Memorial; it appears on American currency, and there is a copy in almost every government office. Now, for the first time, the original will be brought to America for a tour, beginning in New Liverpool—Los Angeles, in our world.

Col. Thomas Bushell of the Royal American Mounted Police (a rough equivalent of the FBI) is responsible for the security of the famous painting. We meet him on an airship journey across the continent from Victoria, the capital. In the course of this journey, the nature of this alternate reality is deftly sketched. This is a slower-moving America than our own—travel is by railroad, dirigible, and

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steam-powered cars, and Victorian mores have waned more slowly. It is in many ways a far more attractive society, as well. Slavery was abolished early, and black Americans have had a much easier path, as exemplified by the current Governor General of the North American Union: Sir Martin Luther King. And most Americans are fiercely loyal to the British crown, currently worn by Charles III (a different Charles III—the Windsor abdication never took place).

At an elaborate (and heavily guarded) reception where the painting will be unveiled to a celebrity crowd, Bushell meets Kathleen Flannery, curator of the traveling expedition—a bright and independent woman who has managed by sheer talent to overcome the handicap of her Irish background. But even before the crowd has gotten a chance to see the painting, it is stolen. A violent dissident group, political separatists styling themselves "The Sons of Liberty," claims the credit—and suddenly Bushell is in the middle of a major crisis. King rushes to the west coast to supervise the investigation himself, as the dissidents present an outrageous ransom demand: enough money to finance their operations for years. Unless the painting can be quickly recovered, it will be a disaster for British-American relations.

Bushell quickly uncovers evidence that the Sons of Liberty are obtaining Russian weapons and gold, and that the source is a small island on the Russian Alaska border. With his right-hand man, Captain Samuel Stanley, Bushell leaves to investigate in person—and to take himself out from under the politicians' scrutiny. This scrutiny threatens to prevent the police from taking any effective action. From there, Bushell is off on a chase across the whole breadth of the continent: from western Canada to an Indian reservation in upstate New York; to Boston, where he meets John Kennedy, a newspaper publisher known to be much in sympathy with the Sons of Liberty; and finally to Victoria, where the various plot strands coalesce into a tense but satisfying conclusion.

Dreyfuss and Turtledove have created an alternate history of considerable depth and complexity. There are the obligatory vignettes of real people as they might have been (including a used-steamer salesman known as "Tricky Dick"), and a good bit of fun with alternate names for familiar places. The thriller plot moves forward effectively, with plenty of surprises and interesting characterization in the minor roles. The relationship of Stanley and Bushell is nicely developed, and Bushell's complex past turns out to play no small part in the resolution of the criminal investigation.

But more interesting is the society that emerges from the authors' assumptions. For one thing, sex roles are far more rigidly defined. Kathleen Flannery has had to overcome sexism as well as anti-Irish prejudice to attain her position as curator of the "Two

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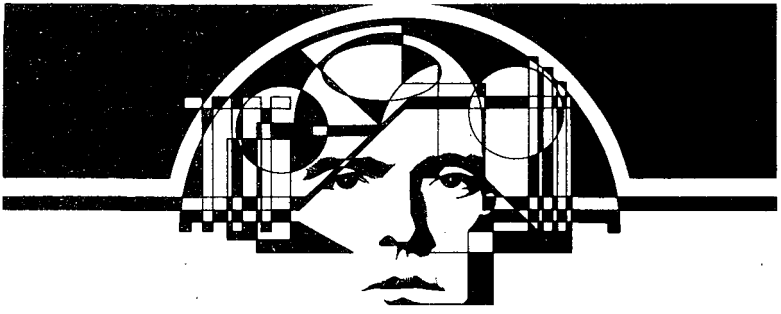
Georges" exhibition. On the other hand, crime, especially violent crime, is far less prevalent; a shooting is almost unheard of. And while race is a far less significant factor in the social fabric (most blacks are compulsively conservative and respectable, and Indians have managed to retain most of their ancestral lands and much of their culture), Irish-Americans have few opportunities, as we see vividly in a visit to a Pennsylvania coal-mining town.

Alternate history is not everyone's cup of tea, and "celebrity novels" are notoriously unlikely to resemble the real thing, even when someone as talented as Turtledove handles the bulk of the writing. But *The Two Georges* is such a convincing narrative—and so effective in its implied criticisms of our society—that the usual objections do not apply. While this one will undoubtedly be in the stores in larger than usual numbers, it's well worth a little effort to hunt it down. ●



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NEXT ISSUE

SEPTEMBER COVER STORY

Robert Reed, one of our most popular writers, returns with a big, complex, and powerful new novella, "Chrysalis," taking us deep into the starless void between galaxies to voyage with an immense generation-ship that has been in flight from implacable enemies for hundreds of years—and then takes us along on an exciting, dangerous, and mysterious mission with a crew of young cadets in training, a mission that leads to a crisis that will force them to question everything they know, and to make a choice that could destroy them all. . . . Don't miss this vivid and compelling widescreen adventure!

BIG-NAME WRITERS

Jonathan Lethem takes us to a grim and troubled future America desperate for almost *any* kind of entertainment, and tells the wry but poignant story of "How We Got in Town and Out Again"; Nebula Award-winner **John Kessel** sweeps us along with some decadent time-travelers to the Glory Days of Hollywood to show us the "Miracle of Ivar Avenue"; Nebula-winner **Gardner Dozois** returns to these pages for the first time in twelve years with a chilling look at an all-too-plausible future "Community"; **Daniel Keys Moran**, also returning to these pages after a long absence, sets his clock "On Sequoia Time" to tell an evocative, lyrical, and sad story of the generations to come; and **Charles Oberndorf**, making a powerful *Asimov's* debut, takes us to an intricate and tumultuous future where the citizens of a high-tech city floating in space must trust their destinies to an "Oracle" of a most unusual kind.

EXCITING FEATURES

Robert Silverberg's "Reflections" column muses about three great SF editors, "Campbell, Boucher, Gold"; plus **Moshe Feder** with "On Books," and an array of cartoons, poems, letters, and other features.

Look for our September issue on sale on your newsstand on July 23, 1996, or subscribe today and be sure to miss none of our upcoming issues!

COMING SOON

Michael Swanwick, Nancy Kress, Lisa Goldstein, Bruce Sterling, Mary Rosenblum, Michael Cassutt, Brian Stableford, Robert Silverberg, L. Timmel Duchamp, Stephen Baxter, Gene Wolfe, Tanith Lee, Howard Waldrop, Ian Watson, Jack McDevitt, Brian W. Aldiss, Rebecca Ore, Charles L. Harness, Ben Bova, Tom Purdom, Avram Davidson, Eliot Fintushel, and many more.

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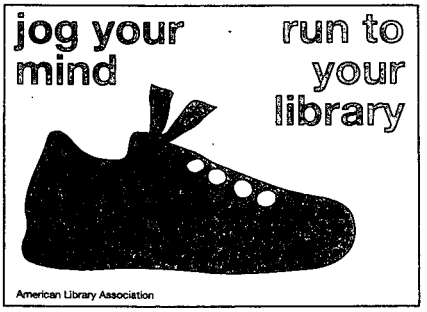

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SF CONVENTIONAL CALENDAR

A lot of special-interest con(vention)s this time. Plan now for social weekends with your favorite SF authors, editors, artists, and fellow fans. For a longer, later list, an explanation of cons, a sample of SF folksongs, and info on clubs and fanzines, send me an SASE (self-addressed, stamped #10 [business] envelope) at 101 S. Whiting #700A, Alexandria VA 22304. The hot line is (703) 461-8645. If a machine answers (with a list of the week's cons), leave a message and I'll call back on my nickel. When writing cons, send an SASE. For free listings, tell me of your con 6 months out. Look for me at cons behind the Filthy Pierre badge, with a musical keyboard. — Erwin S. Strauss

JUNE 1996

20-23—**DragonCon.** For info, write: **Box 47696, Atlanta GA 30362.** Or phone: **(404) 925-2813** (10 AM to 10 PM, not collect). Con will be held in: Atlanta GA (if city omitted, same as in address) at the Hilton & Westin Hotels. Guests will include: C. J. Cherryh, Rudy Rucker. Mostly gaming and comics, but over 100 SF authors, too.

20-23—**Chicago ComiCon. (708) 852-2514.** Convention Center, Rosemont (Chicago) IL. Big meet for comics fans.

21-23—**ConTerpoint. (703) 221-1181.** Ramada Inn Quantico, Triangle VA. Fish, Dr. Jane. SF/fantasy folksing.

22—**Day of the Vampires. (212) 971-8736.** New York NY. Nigel (LaCroix) Bennett (*Forever Knight*), Jericho.

28-30—**Condition Red. (E-mail) conred@inlink.com.** Henry VIII Hotel, St. Louis MO. Levene. Dr. Who/Red Dwarf.

28-30—**MidWestCon. (513) 984-1447 or 631-2543.** Quality Inn Central, Cincinnati OH. The original relax-a-con.

28-30—**Anime Expo. (310) 268-8454. (E-mail) reg@anime-expo.org.** Marriott, Anaheim CA. Japanese animation.

28-30—**Dark Shadows.** LAX Airport Marriott, Los Angeles CA. Many cast members. For fans of the TV show.

JULY 1996

4-7—**WesterCon, Box 3177, El Paso TX 79923. (800) 585-8754.** Camino Real Paso del Norte. The big western con.

4-7—**Origins, Box 1740, Renton WA 98057. (206) 204-5815.** Columbus OH. The year's big gaming meet. 7000 fans.

4-7—**San Diego ComiCon, Box 128458, San Diego CA 92112. (619) 544-9555.** Convention Center. Big comics meet.

5-7—**InConJunction, Box 19776, Indianapolis IN 46219. (317) 839-5519.** Marriott. Knaak, Van Tillburg, Bridge.

5-7—**GaylaxiCon, Box 176, Somerville MA 02143. (800) 767-5757.** Marriott, Burlington MA. Gay fans and friends.

5-7—**RebelCon, 10 Rankin, Worcester MA 01605. (508) 587-1223.** Holiday Inn, Taunton MA. Babylon 5 & Trek.

5-7—**Weekend in Sherwood, 1276 W. Marshall, Ferndale MI 48220. (810) 544-0608.** Sheraton, Novi MI. Robin Hood.

12-14—**LibertyCon, Box 695, Hixson TN 37343.** Days Inn, Chattanooga TN. T. Zahn, Bob Tucker, the Dietricks.

12-14—**ReaderCon, Box 381246, Cambridge MA 02238. (617) 625-6507.** Marriott, Westborough MA. Written SF.

12-14—**Shore Leave, Box 6809, Towson MD 21285. (410) 821-5563.** Marriott, Hunt Valley MD. Star Trek guests.

12-14—**Khan, 2926 Valarie Circle, Colorado Springs CO 80917. (719) 597-5259.** Wil McCarthy. Gaming and SF.

12-14—**FairCon, 226 Woodlands Rd. #3/2, Glasgow G3 6LN, UK.** St. Enoch Hotel. Angus McAllister, Bob Shaw.

13-14—**FandCon, 8529 Marsden, Philadelphia PA 19136. (215) 331-2322.** Guests, no videos, picnic in the park.

13-15—**ConTagion, Box 867, Ruthergien, Glasgow Scotland G73 4HR, United Kingdom.** Media SF/fantasy emphasis.

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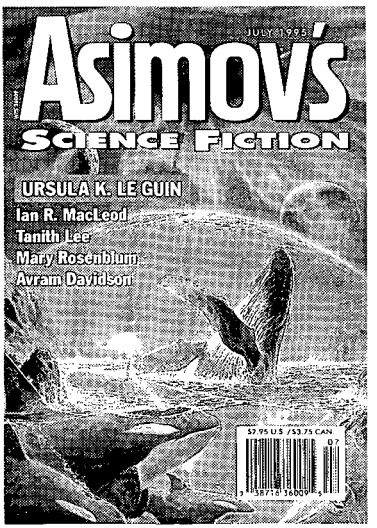

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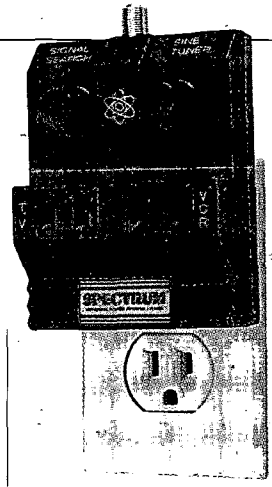
Fifteen years of microelectronic research makes conventional antennas a thing of the past!

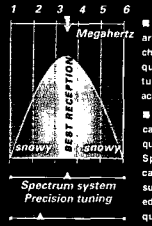
This little box uses your home's electrical wiring to give non-subscribers, cable subscribers and satellite users better TV reception on your local broadcast networks!

by David Evans



Technology corner

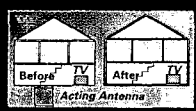
1. Why don't conventional antennas work as well as the Spectrum?



■ When TV signals are tuned at the TV channel's center frequency, optimum tuning has been achieved.

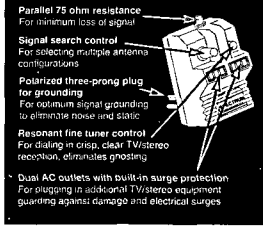
■ Other antennas can't offer center frequency tuning like the Spectrum Antenna can. They only offer such tuning up to the edge of the center frequency. As a result your TV picture remains snowy.

2. How does Spectrum use a home's electrical wiring as an antenna?



Believe it or not, the Spectrum Antenna simply "activates" the giant antenna that already exists in your home. Essentially, it uses all of the wiring throughout your home's walls and ceilings to make an antenna as large as your house for unbelievably clear reception of local broadcasting.

3. Spectrum antenna features


Parallel 75 ohm resistance
For minimum loss of signal
Signal search control
For selecting multiple antenna configurations
Polarized three-prong plug for grounding
For optimum signal grounding to eliminate noise and static
Resonant fine tuner control
For dialing in crisp, clear TV/stereo reception, eliminates ghosting
Dual AC outlets with built-in surge protection
For plugging in additional TV/stereo equipment guarding against damage and electrical surges

Until recently, the only convenient way to guarantee great TV reception was to have cable installed or place an antenna on top of your TV. But who wants to pay a monthly cable fee just to get clear reception, or have rabbit-ear antennas that just don't work on all stations? Some people just aren't interested in subscribing to cable. Or they may live in an area where they can't get cable and TV-top antennas aren't powerful enough. And what about those people who have cable or satellite systems but still can't get certain local stations in clearly?

Now, thanks to fifteen years of microelectronics research, a new device has been developed that is so advanced, it actually makes conventional antennas a thing of the past. It's called the Spectrum Universal Antenna/Tuner.

Advanced technology. Just imagine watching TV and seeing a picture so clear that you'd almost swear you were there live. Just plug the Spectrum Antenna into a standard AC outlet and plug your TV into the Spectrum. You can remove the unsightly clutter of traditional TV-top devices gathering more dust than television signals. Get ready for great reception. Your TV will suddenly display a sharp, focused picture thanks to its advanced design "Signal Search" and "Fine Tuner" controls.

Who can use Spectrum?

- ***Cable users-You have cable but you can't get certain local stations in clearly.***
- ***Non-cable users-You don't have cable and want the stations to come in more clearly***
- ***Satellite users-You have a digital satellite system but can't get local stations in clearly***

Uses your home's electrical wiring. The Spectrum Antenna is a highly sophisticated electronic device that connects into a standard wall outlet. The outlet interfaces the Spectrum Antenna with the huge antenna that is your home wiring network. It takes the electrical wiring in your house or apartment and turns it into a multi-tunable, giant TV reception station which will improve your TV's overall tuning capability. The results are incredible. Just think how much power runs through your home's AC wiring system—all that power will be used to receive your local broadcasting signals.

How it works. Broadcast TV signals are sent out from the local broadcast station (ABC, CBS, NBC, etc.). They interface with your home's AC power line system, a huge aerial antenna network of wiring as large as your home itself. When the Spectrum Antenna interfaces with the AC line, the signal is sent to its signal processing circuit. It then processes and separates the signal into 12 of the best antenna configurations. These specially processed signals route themselves into 12 separate circuits. The Spectrum Antenna includes a 12-position rotary tapping switch, the "Signal Switch" control, which gathers twelve of the best antenna configurations.

The "Signal Search" offers varying antenna configurations for the user to select from the best signals of all those being sent. The signal then passes through the Spectrum Antenna's special "Fine Tuner" circuit for producing crisp, clear reception.

Risk-free offer. The Spectrum Universal Antenna/Tuner comes with our exclusive 90-day risk-free home trial and a 90-day manufacturer's warranty. Try it, and if you're not satisfied, return it for a full "No Questions Asked" refund.

Limited time offer! We realize that most people have more than one TV in their home. We are offering a special discount on additional Spectrum Antennas so you get great reception on all your TVs!

Spectrum Antenna .....**$39** $4 S&H

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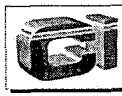

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